MONONGAHELA RIVER OIL SPILL

HEARING

BEFORE THE

SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON
MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES

ONE HUNDREDTH CONGRESS

SECOND SESSION

ON

THE EFFECTS OF THE OIL SPILL IN FLOREFFE, PENNSYLVANIA, ON THE ENVIRONMENT AND LIVES OF THOSE IN THE AREA; AND TO DESIGN A POLICY WHICH WILL PROTECT THIS NATION'S ENVIRONMENTAL RESOURCES

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MONONGAHELA RIVER OIL SPILL

THURSDAY, MAY 26, 1988

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS,
COMMITTEE ON MERCHANT MARINE AND FISHERIES,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:28 a.m., in room 1334, Longworth House Office Building, Hon. Thomas M. Foglietta [chairman of the subcommittee] presiding.

Present: Representatives Foglietta, Borski, Carper, Schneider, Saxton, Bentley, Weldon, and Bunning.

Staff present: Kurt Oxley, Wendell Pritchett, Peter Marx, and Barbara Cavas.

STATEMENT OF HON. THOMAS M. FOGLIETTA, CHAIRMAN, SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS

Mr. FOGLIETTA. The Subcommittee on Oversight and Investigations of the Merchant Marine and Fisheries Committee will now come to order.

I would like to greet the witnesses and others this morning, and welcome you to what I expect to be a very interesting hearing on this very important issue.

The oil spill in Floreffe, Pennsylvania was one of the largest in recent history. And it directly effected the lives of over one million people. But it indirectly impacted every American who lives near an oil facility. There are over 600,000 above ground tanks which EPA has the authority to regulate. That's more, on the average of, than 1,000 in every Congressional District.

As Members of Congress we have been given the responsibility to protect the environmental quality of life in this Country. Ensuring the integrity of these vessels is an important part of this responsibility. Over the past four and one half months, since January 2nd, hearings have been held, reports commissioned, evaluations given, as to what happened.

One of the purposes of this hearing will be to put this information on record. But today, we also have a larger goal. That goal is to use the knowledge collected in the aftermath of this significant event to develop a policy to ensure that a spill of this magnitude does not happen again.

Obviously, there are inherent risks in the transport of a commodity like oil. Congress enacts law and orders regulations to limit this risk. The EPA was given the authority under the Clean Water Act to regulate above ground tanks. In my opinion, there are some gaping holes in the existing regulations.

For example, the six-month grace period presently given facilities to submit energy plans is an unreasonable safety risk. Closing these gaps will make the occurrence of major spills less likely, and will strengthen our ability to respond to those accidents which we cannot control.

Congress does not enact legislation to punish. The purpose of these statutes is not to burden the overwhelming majority of companies who show concern for the environment, and who follow established procedures. Our goal is to protect against those instances where standard practices are not followed, and to establish a system which will lessen the impact of unforeseen events.

This hearing begins the process of bringing the interested parties together to design a policy which will protect this Nation's environmental resources. We will use the expertise of the witnesses before this committee to try to reach a consensus on how we can improve upon the regulatory structure which protects each and every American.

I would like, at this point, to recognize the ranking member, Ms. Schneider.

STATEMENT OF HON. CLAUDINE SCHNEIDER, A U.S. REPRESENTATIVE FROM RHODE ISLAND

Ms. SCHNEIDER. Thank you, Mr. Chairman.

I'd like to begin by commending you for holding this hearing, the first of our Oversight and Investigations hearings. I believe that it is a topic that is very much worth the attention of Congress and the attention of the American people.

Certainly the disastrous oil spill that occurred in the Monongahela and Ohio Rivers in January is one that got public attention. But I'd like to also comment on the very efficient and speedy response that Ashland Oil Company exhibited in the wake of disaster. I believe that they did minimize the disruption that took place and otherwise hundreds of thousands of additional people could have been effected. I think that Ashland's response doesn't minimize or erase the mistakes that were made in the first place, but certainly their honesty and integrity is commendable.

And I certainly believe that in terms of policy our job, our responsibility here, goes beyond minimizing adverse effects of such a disaster, but rather to preventing them in the first place. This spill, which was one of the largest inland spills that this Country has ever experienced, shut down schools and factories, and left 830,000 people without drinking water.

Recognizing that this kind of situation can happen almost anywhere—my own State of Rhode Island took some preemptive moves and passed legislation. We're only one of a handful of States that does regulate above ground storage tanks. And Rhode Island's own oil pollution control regulations were put into effect last August, which was five months before this particular incident. It has a number of specific requirements, including emergency plans, and also requiring that all new tanks be on impermeable surfaces, and have impermeable containment dikes.

But despite the fine job that my own State of Rhode Island has done, I'm very interested in hearing from two very special leaders

in the House and in the Senate, who are proposing particular legislation. I'm happy to welcome Senator Heinz, one of my good friends and reliable colleagues over on the other side of the Senate; and Congressman Walgren, whom I have the pleasure of serving with on the Science and Technology Committee, who has always attempted to be in the forefront of preventing disasters, particularly where we know technology can provide some of those solutions. So, I welcome the two of you and look forward to whatever it is you have to share with us.

Thank you.

Mr. FOGLIETTA. Thank you.

Now, Congressman Borski, do you have a statement?

STATEMENT OF HON. ROBERT A. BORSKI, A U.S. REPRESENTATIVE FROM PENNSYLVANIA

Mr. BORSKI. Yes, Mr. Chairman, thank you very much. I wanted to join the committee today, and give special congratulations to you on your first day as Chairman of this most important subcommittee, and to make note that the committee is not only already aware, or the merchant marine community, that what we in Philadelphia know, that you will serve this committee as Chairman, with class, dignity, honor, and fairness. All of us in Philadelphia are very proud of you, and congratulations once again, Mr. Chairman.

Mr. FOGLIETTA. I thank you so very much, Bob.

Mr. Bunning?

STATEMENT OF HON. JIM BUNNING, A U.S. REPRESENTATIVE FROM KENTUCKY

Mr. BUNNING. Thank you, Mr. Chairman, for holding this oversight hearing on the Ohio River/Monongahela River spill.

As one of the four Kentucky Districts affected by the spill, I'm privileged to be invited to sit on in this meeting, and I really appreciate it. I'd like to welcome Senator Heinz and Congressman Walgren. Thank you for taking time to be here today. I realize that the House Energy and Commerce and the Senate Environment and Protection and Public Works Committees have had the benefit of hearings from the representatives on this issue. And Mr. Chairman, I am glad to share this opportunity to listen to what these people have to say today.

Thank you.

Mr. FOGLIETTA. Thank the gentleman.

Before asking Mr. Weldon for his statement, I'd like to invite those people who are standing to sit in the lower tier of the tables, if you'd like.

I guess you don't like.

Mr. Weldon?

STATEMENT OF HON. CURT WELDON, A U.S. REPRESENTATIVE FROM PENNSYLVANIA

Mr. WELDON. Thank you, Mr. Chairman. And I also want to commend you for holding these very important hearings and I look forward to testimony, both from our colleagues and from our friend

from the other body, Senator Heinz, in what was obviously a very critical situation.

As someone who was a mayor of a community with two large oil refineries, I know the complexities that can occur when you have a disaster of this type. And I look forward to hearing the testimony and, most importantly, the recommendations that we all can garner from this incident in terms of legislative changes.

So I thank you and yield back the remainder of my time.

Mr. FOGLIETTA. I thank you, Mr. Weldon.

I would like, at this time, to pass out the photographs of the tank in question here after the explosion occurred. I'm passing to the members of the committee. This one shows the oil line showing how high the gush of oil from the adjoining tank went, and actually crushed in the side of the adjoining tank. I would appreciate your passing them on this side.

While you're looking at those I think we should proceed, because I realize how busy the first two witnesses are.

Mr. FOGLIETTA. First of all I want to welcome to this hearing my friend and my Senator, the Honorable John Heinz, who represents the great State of Pennsylvania, and who is a native of the Pittsburgh area. You have always shown concern for these issues which affect the environment and this Nation, especially as they affect your area in the Commonwealth of Pennsylvania. Your concern for these issues is deeply appreciated by all the people of this Nation. We welcome you to this hearing this morning.

And I also want to welcome Congressman Walgren, who is also extremely concerned with the problems of the environment throughout this Nation, and has been doing yeoman's service in his committee assignment to protect the people of this Nation from this kind of an activity.

Your prepared statements will be inserted immediately following your oral presentations.

Gentlemen. Mr. Heinz.

STATEMENT OF HON. JOHN HEINZ, A U.S. SENATOR FROM PENNSYLVANIA

Senator HEINZ. Well, first, Mr. Chairman, thank you for those kind words. And in the interest of time I'd ask unanimous consent that my entire written statement be a part of the record.

And let me say, I'm very pleased to be here with Congressman Doug Walgren. He and I have become rather more expert on natural disasters than either he or I had ever hoped. And he does a very good job of taking his responsibilities seriously, and he has, as a result, introduced a bill on which he'll be testifying, a very far-reaching one, to address the problems revealed by the Ashland Oil spill.

I might say, parenthetically, that even though his bill may be an outstanding bill, I'm a little concerned that the perfect may be the enemy of the good in this sense. That we live in a time of budget deficits, we have an agency in EPA that has expanding missions on air, on water, on superfund to name just a few, and I hope that any legislation that we adopt will not be such that without adding to

EPA's already strained resources we give EPA a mission that it cannot intelligently perform.

And performance is what we want to see. We want to see the agency perform. We want to see the potential polluters perform, and we want to make sure that things work right. And I can't resist mentioning, as I see Congressman Borski, and yourself, Mr. Chairman, and Curt Weldon from Delaware County, all three of you from Southeastern Pennsylvania, recollecting how it is easy to, shall we say, overtax the resources of an agency. Remember that about three years ago, the IRS Processing Center in Northeast Philadelphia, it came to a confusing halt in its processing. To say that it was overtaxed, is to understate the case. I simply don't want to put EPA in a position where it can't perform its job either well, or on time.

So that's why my legislation takes a rather targeted approach compared to some of the other bills. Before I describe that legislation I want to join the other members of your subcommittee, Mr. Chairman, in congratulating you on your new responsibilities, and especially on thanking you for holding today's hearing.

And of course, what we are really specifically here to talk about is the one million gallon diesel fuel spill on the Monongahela in January of this year. And it is a catastrophe that needs to be fully investigated. And we, in Congress, very well must act to prevent another spill like the one that we experienced.

That disaster that we all witnessed, and I saw you pass around the photographs, most appropriately, would have been far worse, let it be said, if it hadn't been for the excellent action of local authorities, the Allegheny County Commissioners, in particular their able chairman, Tom Foerster, the local fire and police forces, and other emergency management officials in Western Pennsylvania. Those local officials acted not only immediately, but very efficiently and effectively. And for that, many people downstream, I think, on the Ohio River can be very grateful.

Nevertheless, we can't continue to rely on being protected solely by local officials' heroic response. All saw how true the old adage was, "oil and water do not mix." We also saw that an ounce of prevention is indeed worth a pound of cure, or in this case, one million gallons of No. 2 diesel fuel spilled from a four million gallon tank.

And as the committee is well aware, this million gallons of spilled diesel fuel fouled the Monongahela and Ohio Rivers, which provide drinking water to numerous communities along both the rivers. As the more or less comet-like head of the oil spill made its way down the rivers, many Pennsylvania, West Virginia, and Ohio communities, including those further down in Congressman Bunning's area, were forced to close or heavily restrict their water intake. All in all the EPA estimates that 830,000 people, more than double the population of the City of Pittsburgh, had had their drinking water affected before this black tide of polluted water dissipated. It is too early to tell what the environmental impact will be. Federal, State and local agencies are assessing the long-term environmental damage to the river and ground water, to the river beaches, and the river wildlife.

But, Mr. Chairman, it is not too early to take action to ensure that this can never happen again. And so I, along with Senators

Mitchell of Maine, Durenburger of Minnesota, and Senator Specter, our colleague, have introduced S. 2020, the Above Ground Storage Tank Spill Prevention Act of 1988. Our legislation is designed to prevent another environmental catastrophe like the one we witnessed.

Unfortunately, this environmental disaster made us aware of a gap in existing environmental regulation. The gap I speak of is lack of Federal and State requirements to monitor the use and operation of above ground storage tanks that contain large volumes of liquid petroleum products. As I understand the existing requirements, State and local law may require an owner or operator of an above ground storage tank to obtain a permit for construction of the tank and to get an inspection of the tank after construction is complete. However, these regulations vary widely from locale-to-locale, the regulations are difficult to enforce, technical expertise to do so may be lacking especially at the local level, and there is not a regular means of monitoring these tanks after the permits have been issued. In addition, Federal regulation applies only to containment plans and does not address, at all, tank integrity.

Experience has shown us that large capacity above ground tanks that have been operating for a long time or that have been altered through reconstruction or relocation need to be regulated to assure that the tanks retain their integrity.

Mr. Chairman, the Above Ground Storage Tank Spill Prevention Act of 1988, S. 2020, will require EPA to promulgate national requirements concerning an identifiable class of above ground storage tanks, specifically those tanks that pose a risk of catastrophic failure, such as rupture or collapse. This class of tank has the capacity to contain at least one million gallons of petroleum and are at least 30 years old, or have been relocated, or reconstructed.

Mr. Chairman, as I speak, I'm informed that the President of the Ashland Oil Company, Mr. Hall, is in Pittsburgh holding a press conference to announce the release of the Battelle Lab's report on the cause of the diesel fuel tank rupture in January. What Battelle found was that the primary, and indeed sole, cause of the tank failure was an existing flaw in the steel shell. That flaw was caused when the tank was initially constructed in Ohio. The existing flaw was further stressed during the reconstruction in Floreffe, to the point of catastrophic failure as we saw. That report, I suggest, Mr. Chairman, clearly supports the point of our legislation, that we, in particular, regulate reconstructed or relocated above ground storage tanks.

Focusing the regulatory efforts and resources of the Federal and State environmental agencies on the tanks that exhibit tendencies to fail catastrophically is, therefore, the appropriate legislative response to the Ashland accident. In consideration of the existing budget constraints that we all know EPA faces, I believe that we must resist creating a broad-based above ground storage tank program that will prove, in effect, to be unworkable because it will be unenforceable. As the scope and extent of environmental problems expand along with the budget deficit, Congress, I think, needs to be judicious in imposing regulations.

Mr. Chairman, in conclusion, I said earlier that oil and water do not mix. Our legislation is carefully designed to see to it that we do

everything possible to keep them apart. I think we correct an existing gap in our environmental regulation, and in the unfortunate circumstances of another occurrence, provides also for a quick and orderly cleanup.

Mr. Chairman, we all look forward to working closely with the House, with your Committee, and Subcommittee, to pass legislation that will provide the means to prevent another environmental tragedy like we experienced in Western Pennsylvania early this year.

I thank you for the opportunity to be here.

[The prepared statement of Senator Heinz can be found at end of hearing.]

Mr. FOGLIETTA. Thank you very much, Senator. I'm glad that you made the quote that you did, namely that perfect may be the enemy of the good.

So now we will listen to the person who is the offeror of the perfect legislation.

Congressman Walgren?

STATEMENT OF HON. DOUG WALGREN, A U.S. REPRESENTATIVE FROM PENNSYLVANIA

Mr. WALGREN. Well, thank you very much, Mr. Chairman, and I appreciate the opportunity to come and talk with you about what happened in my District, and Senator Heinz's State, and all of our State, those of you from Pennsylvania.

It was a very serious incident, and I think deserves a strong response by the Federal Government. I want to especially salute the long history that this committee's interest in the kinds of accidents that this represents, has had. And I know that you have, out of this committee, passed legislation in the House of Representatives that would have clarified the liabilities of owners or operators of this kind of facility, but it has not yet become law because it's been difficult to get agreement with the other body. One of the real opportunities, I think, that this incident gives us is the attention throughout the Midwest that this incident caused because of its impact on the Ohio River Valley. And I hope that it gives us the focus to actually reach some kind of an agreement on where legislation in this area should go.

Congressman Luken, Congressman Mazzoli, Congressman Hubbard, Congressman Gray, Congressmen Applegate, Murphy, Kolter and Bates have joined me in introducing H.R. 4098, which starts, I think, from the premise that we start with being perfectly safe, or as safe as we possibly can be, and we know that in the legislative process we will find the balances that would need to be struck to effect legislation. But certainly we feel that we want to raise a very strong comprehensive vehicle for discussion among both House and Senate about the proper response to this incident.

This was a tremendous accident. And I think it's very hard to appreciate it from the pictures alone. But essentially, there was a sudden release of this kind of brittle fracture, as I understand it, is an instantaneous event. The speed with which it travels in the metal approaches the speed of sound. And so all of a sudden there essentially was a column 40 feet high of pure liquid standing there

ready to overcome almost any spill prevention containment systems that had been put in place. And it resulted in nearly a million gallons going right into the river.

And although there was a valiant effort at response, the ability to mitigate that spill once it got into the river, or lessen its damage, was very limited. It fast filled the whole cross section of the river from top to far down below the surface. And shortly thereafter went over a dam across the river, which essentially emulsified the mixture and broke it up so that it stayed deep down in that cross section, and literally was deeper than even the deepest water intakes of the various water supplies along the river.

And consequently our area, the whole Southern part of Allegheny County was without water for up to eight days. We were fortunate to have some fractional availability of an upstream water intake, but it only provided less than 30 percent of what the consumption normally was. And so we went into an extreme period of water conservation, and the people just have to be really saluted for what they were able to do, in consideration of enabling their neighbor not to run out of water, because these systems drain from the top down, and the first people that run out of water are those on the higher elevations, and then down the system. And so through conservation we were able to keep that water supply at a minimum throughout that district, but it was only because everybody identified with somebody else's circumstances.

And those communities that did run out, and the prospect of running out were very threatening, many older people cannot, particularly in wintertime with ice and the like, carry a heavy object, a bucket of water or something like that into their home. So it was a very, very threatening circumstances.

The greatest dismay was to find out that there really was so little Federal regulation that we could have relied on to assure public safety in these circumstances. The regulation of above ground tanks is limited, at best, and simply does not reach the kind of failure that we suffered in Pittsburgh. First, there is no direct regulation of the structural strength required for tank safety. There are voluntary industry practices, but there is no direct regulation of those practices. There are some regulations for spill containment, but their actual enforcement through inspection is extremely random and in the universe of tanks essentially non existent.

The EPA spill containment regulations are broad and vague, and they essentially, at least until this point, have left the industry in the role of setting its own standards, and then policing its own response to those standards, and conducting whatever inspections are conducted. So we are really in an area that has not had any substantial oversight by Federal regulatory bodies. EPA does not require spill containment plans to be kept current. When a tank is relocated, you can go up to six months of operation before you file whatever your plans are, or may be, to provide the kind of spill containment that are asked for under present regulation. These tanks are allowed to be put into operation without any testing, and without any inspection. The Pittsburgh tank had been under construction for about 18 months, the spill containment plan was not

filed until after the accident, and of course, there was no testing of this tank before it was filled with oil.

A number of agencies have expressed their interest in the jurisdiction, but none directly address this kind of tank failure. The Coast Guard responds to spills essentially from vessels on the waterway. The EPA addresses spills on land and into waterways, but it does not regulate tank structure directly. The Solid Waste Disposal Act regulates underground storage tanks, but does not address above ground storage tanks. The Hazardous Materials Transportation Act regulates hazardous materials, but oil is not one of them. And so, we really do have a situation here where there is a very large gap in public assurance that the right thing will happen.

The bill that we have introduced, essentially requires comprehensive standards and a clear enforcement program that would prevent a spill like we had in Pittsburgh. The proposal would add a new section to the Solid Waste Disposal Act that would require EPA to issue regulations prescribing standards for all above ground storage tanks with a capacity greater than 4,200 gallons. And that would include, specifically, oil tanks, as well as the other kinds of hazardous substances.

The standards would cover, under this legislation, design, siting, construction, testing, maintenance, and the spill containment systems and plans, all to be confirmed by periodic, independent, inspections. And I think that that's where you have to start from if you are to start with safety.

The regulations would require both a spill prevention system, and a response plan. The system would require a secondary containment system sufficient to contain all the spills and leaks, and specifically ask that sudden release be addressed. The response plan would include the training of personnel, the assessment of what cleanup equipment is immediately available, and the requirement of notification of local officials and a National response center.

The bill would require testing of all tanks, including rebuilt tanks before operation. And no rebuilt tanks would be allowed to operate until the tank is inspected, tested and certified.

That was not done in this instance, for reasons that no one really can quite understand. Certainly it can be said that the flags were not raised. And apparently it takes a formal legislative flag to be raised so that we can be assured that tanks will in fact be tested before they are put in operation.

This bill would also make owners and operators clearly liable for the cleanup of spills and leaks, and liable for all the consequent damages of both the water supply and to the environment. And it would provide a range of fines and even a criminal penalty for deliberate intentional violation that would threaten the public interest.

Things could have been a lot worse. There are areas in this Country which did not have the multiple access to water, that was able to give us at least the ability to limp along. There are areas where this kind of a spill would permanently destroy, at least for all the foreseeable future, water supplies that communities now rely on. We were, in a sense, just lucky, but just lucky implies taking full measure of the threat, and full measure of the kind of

damage that can be done. And with over 600,000 of these kinds of facilities in communities across the Country, and with the estimate being that even on the ones, the few that we've inspected thus far, the deficiency rate with respect to current standards, let alone the inspection and the structural safety and the like, over one-fifth of those that we are inspecting are found to be deficient in the current spill containment plans.

So we have a great deficiency out there that we clearly should address. And I hope this incident and the drama that polluting the entire Ohio River involves, and the sensitizing of the public amount those many States, and the rest of the region, I hope that will bring us and the Congress to a focus and enable the kind of consensus to develop that would enable us to pass legislation that will protect the public in this area.

I certainly appreciate the committee's interest, and appreciate the chance to come talk with you.

[The prepared statement of Mr. Walgren can be found at end of hearing.]

Mr. FOGLIETTA. I thank you, Congressman Walgren.

I will present a few questions, which either one of you could answer or comment upon.

In your opinion, was the EPA's response sufficiently swift and efficient, and how could it have been improved? You've both commented on responses, but I don't think we zeroed in on EPA particularly.

Senator HEINZ. Mr. Chairman, I'll take a crack at that, even if I do have EPA sitting behind my back.

[Laughter.]

Senator HEINZ. My impression is this, that there was some initial confusion between the Coast Guard and the Department of Environmental Resources, and EPA. I received a telegram from Governor Casey early the Monday morning after the oil spill. The oil spill took place late on Saturday. And the telegram requested that EPA Federalize the cleanup at that point.

EPA's position was, and remained, indeed with ultimately the concurrence of the State that they monitor the performance of responsibilities by Ashland, and were standing by to assist with technical expertise and any other assistance that might be necessary.

On that Monday morning when there seemed to be a desire on the part of the State and DER to insist on an EPA determination that they should take over the cleanup, I called Walter Giese in the Governor's office to ask if the request was still extant. And I was told by Walter Giese that at that point they felt that the cleanup was proceeding well, and that they were not insisting that EPA exercise its special authority to take over every aspect of the spill, because Ashland, it was felt, was doing what they were being asked to do by the various localities, counties, and other affected parties.

One can take a microscope and place it on the question of whether or not, in the very first few hours, was everything done to contain the spill. And there is, I think, a credible case that the Coast Guard was rather slow to act on a request by the County to deploy booms into the river to contain the oil. How much difference it would have made had those booms been deployed, I do not know, and that is a question one must, I think, address to the experts.

The booms that were subsequently deployed, and did contain some oil, proved to be only—as I recollect—a modest success anyway. But that is an area that is well worth looking at.

I take the point of view that we were lucky. By and large, lucky there wasn't more confusion. And there is certainly the potential for it. So in our legislation, S. 2020, we provide for EPA to in effect approve State plans to deal with this kind of emergency that might in the future occur. Although we believe that if you enact S. 2020, such emergencies will not occur.

Mr. WALGREN. If I could just add to what Senator Heinz has said, I think our looking back on this incident, we find it very hard to fault the effort that was given by any of the people involved in the response and that includes the EPA.

I felt that it was important to Federalize the cleanup, or to Federalize the responsibility because of the psychological impact that would have had on the residents of Allegheny County, emphasizing the importance to conserve water, when essentially the response from Federal emergency authorities, was that while we're letting the company take care of this, and we're just "monitoring" the situation, it was as if something of great dimension may not have happened here, and we don't need to be all that concerned about it. And it was the filling in of the news media that enabled the conservation to take place, but they had to really create and communicate that problem, whereas we missed a real chance by taking responsibility as Federal emergency response personnel to emphasize the importance of what had happened, and the importance of conservation.

There were some cracks in the system. There was supposed to be, as I understand, a National inventory of cleanup equipment maintained that is now no longer maintained by the Federal Government because of the reductions in budgets over recent years. Conceivably, something like that could be critically important. But I am afraid, looking back on this instance, that once it got into the water and over that first dam, the booms would not have really protected the drinking water supply, because it was so churned into the cross section of the river. So when we look back on this particular incident, the ability of response to actually prevent damage is relatively limited. But that will not be the case in other kinds of incidents.

Mr. FOGLIETTA. Since each of you have introduced specific different legislation, I would like to ask each of you how your legislation would address the problem that we now face, more specifically, however, how do we ask an already overburdened agency like EPA to take on these additional responsibilities?

Senator HEINZ. Well, Mr. Chairman, I suppose if there is a significant difference between what Congressman Walgren has proposed and what I've proposed, it is that his bill is far more comprehensive, and he's to be commended for that.

Mine is directed at those kinds of oil tanks that pose the greatest risk, namely those one million gallons and up that are 30 years of age, or older, or any that are one million gallons and up that have been reconstructed, moved, relocated. We have done that because the experts we have talked to have all said that is where you are going to have failures of tanks.

Of course, the tank that failed at Floreffe contained 3.8 million gallons. And because of the vast quantity of fluid and its tremendous energy when it was released—as you saw in the photos—simply, that huge quantity created a physical condition such that the containment that would normally stop anything less than a catastrophic failure, was for all intense and purposes meaningless.

And it is the goal of our legislation to focus on tanks which have the size and volume of collapsing a way where they can overwhelm their containment devises and within that category, those kinds of tanks that have a higher risk of failure, namely those that have been stressed either by age or by being moved.

Mr. WALGREN. And on our side, we certainly appreciate the reasons and the logic that Senator Heinz has focused on. But I do feel that we are not asking very much. In fact, you can require comprehensive inspection without really incurring anything further than the industry would now ask for.

We do realize that we can't put new financial burdens on general appropriations, and we provide for an enforcement tank fund, much as has been done recently with underground tanks, we would generate through a fee based on each tank, at least the revenue to conduct an inspection. Now the inspections are to be conducted by a certified engineer, not by the EPA, but rather by the operator contracting with an independent, someone not continually in their employee, an independent engineer to look at the tank.

But these tanks present tremendous problems. And it seems to me to be wrongful to operate such a facility without at least having some kind of periodic inspection. And it's my belief that since all we are doing is requiring the monitoring of these inspections, backing it up with civil penalties so that the proper effort will be gone through by the owner or operator of the tank, that we are not imposing a large financial burden, or even an unmanageable oversight burden on the EPA.

Mr. FOGLIETTA. I thank both you gentlemen.

Ms. Schneider?

Ms. SCHNEIDER. I would like to ask both of you gentlemen how you feel your individual pieces of legislation would impact States like Rhode Island, where we have already passed our own State legislation?

Senator HEINZ. Congresswoman Schneider, we specifically ensure under Section 9028 of my bill, entitled State Authority, that nothing in that subtitle, which is a part of the Solid Waste Disposal Act, precludes a State or political subdivision of a State from adopting or enforcing requirements that are stricter than those in the bill.

Ms. SCHNEIDER. Okay.

Mr. WALGREN. And the same is true with our approach.

Ms. SCHNEIDER. And have either of you done any tangible cost estimates for your individual bills?

Senator HEINZ. I wish that were possible. But one of the reasons that my bill, and it may be true of Doug Walgren's bill, too, requires a census of tanks, is if you ask the question, how many oil storage tanks of a million gallons or more are there in the United States, nobody can give you an answer. And so we need to know what the population is—we need the demographics of these tanks.

We don't know enough about them. EPA does oversee some 600,000, but that's all we know.

Ms. SCHNEIDER. Do you think that such a data base ought to be accumulated?

Senator HEINZ. Absolutely. And our legislation would compel it to be accumulated promptly.

Ms. SCHNEIDER. Anything else you'd like to add?

Mr. WALGREN. From a Governmental standpoint, I don't envision substantial new costs from this kind of requirement that we put in our bill. Essentially it would ask each of the owners or operators of these tanks to conduct the kind of inspection that would give the public some assurance of safety, and the structural integrity of that facility. But in my view, if you're owning and operating that kind of a tank, clearly that's a reasonable request to be made of you by the public, and is not viewed—and does not directly impact the kind of funding which we have to give to the EPA for the range of activity that they do.

The added administrative burden that would come from overseeing this would be supported by a fee based on tank and tank size, and that when broken down to an individual tank, obviously, is not a great cost per tank.

Ms. SCHNEIDER. Thank you.

Are there specific—I'm sorry, you may have said this, but I didn't hear. Are there any emergency plans that are part of your individual pieces of legislation? Any kind of specific emergency plans that——

Senator HEINZ. The answer for S. 2020 is yes, in that we mandate that EPA establish a response program to ensure prompt and effective cleanup of a petroleum spill from an above ground storage tank. We have a provision for approving State programs, much like any State primacy concept that you would find in other environmental laws. We do have a variety of other enforcement and monitoring requirements so that there are some teeth behind those requirements.

Ms. SCHNEIDER. Okay.

Mr. WALGREN. And on our side, the specific requirement is that there be notification to a national response system on the event of an accident. And that notice would have to be, of course, immediate.

Ms. SCHNEIDER. Good.

Okay, I have no further questions, Mr. Chairman. Thank you.

Mr. FOGLIETTA. I thank the gentlelady.

Mr. Weldon, before you ask your questions, I'd like to comment on the fact that in your district, or the part of your Congressional District which is within the City of Philadelphia, commonly referred to as Southwest Philadelphia, there are 400 of these type tanks containing approximately 800 million gallons of oil. I'm sure that there are literally hundreds, maybe even thousands more in your district, in the area of Marcus Hook. So we realize what a very serious problem this is to the City of Philadelphia, and especially your Congressional District.

Mr. WELDON. I thank the Chairman, and I guess I would add to that that I lived for the first 36 years of my life, two blocks between the two largest refineries on the East Coast, the Sun Refin-

ery and the British Petroleum, the old Sinclair Refinery. And probably in my hometown alone, have 200 of these storage tanks, well in excess of the tank that is in question here.

And let me start out by saying, I think there are two separate and distinct issues here, and I've had some involvement, as the mayor of my hometown for five years, in these issues. One is the regulation of the construction and operation of these tanks, and the second is the environmental response and emergency response to incidents involving them.

Let me first of all state that I think one of the reasons why we have seen a lack of apparent Federal regulations is very simply that the record of the petroleum industry Nationwide has been a good one. We can always point to incidents and say that things should have and could have been better, but having lived, once again, for 36 years in Marcus Hook, I can never recall a tank failing, of this situation and this type, and never recall an incident where structurally a tank did not do what it was designed to do. And I think the industry, certainly through the API, has done a commendable job in trying to have the most technically proficient regulations in place on construction and stability of these kinds of facilities.

I think this was a case where we had a tank that was relocated. The problem here is one that the industry is going to have to deal with now, because I think the industry allowed a situation to occur that should never have occurred. When you relocate a tank that has been in operation, and then constructed at a new location, certainly I think you have to take every precaution possible to make sure that that tank will not fail structurally, and that has the integrity to maintain the load that's going to be placed inside of it. The industry didn't do that in this case, and therefore we have this hearing, and I would say to industry, you're probably going to see regulations develop now. And it's unfortunate that that's occurred, because the track record, I think, in the petroleum industry has been a good one.

And I want to start out by saying that, because many companies I know go to great lengths to protect not only the residents around the refineries and installations, but also the people who work there.

In terms of the regulations of storage vessels, I was under the impression that in Pennsylvania, the Department of Labor Industry had jurisdiction. And I will be anxious to hear from our State officials when they testify whether or not they still inspect these types of tanks when they are constructed. I was under the impression that they had that legal responsibility, and if they have that responsibility what their actions were in this particular case for inspection.

I commend both gentlemen for the bills they've offered, and I think there is going to be a need for this type of legislation. My concern, I guess, is whether or not EPA can handle the technical inspection. And Congressman Walgren, you cleared up certainly one point in my mind when you said that EPA would not actually do the inspection, but would contract out to engineering people. That, I think, is a very important part of your bill.

Mr. WALGREN. Well, not only that, but they would not even contract out. It would be the responsibility of the owner to arrange for an independent inspection. And it's as simple as that.

Mr. WELDON. I think that would be the way to go, because I don't think EPA has the technical expertise in the area of welds, and in the are of structural integrity, to inspect these kinds of vessels.

Let me add, while this was certainly a terrible, tragic incident, we're just lucky that tank wasn't filled with gasoline, or you really would have had a major incident on your hands, far worse than what we had with diesel fuel, or whatever, I guess it was diesel fuel that was involved here.

So in terms of the legislation that my two colleagues are proposing, I think certainly it's an area that we have to explore, and I'm willing to work with you both in this area. My concern would be who was going to do the inspection of the vessels and whether or not in States like Pennsylvania, there are existing agencies that have that responsibility, and if there are, why they didn't do their job in this case.

And I'm going to be particularly interested in whether or not L and I did in fact inspect that tank. Do you know, Congressman, or Senator Heinz, whether or not they did in fact inspect to certify that tank, L and I?

Mr. WALGREN. I have never heard of a State inspection of certification of these tanks.

Senator HEINZ. In Allegheny County it's generally a responsibility of the county fire department to take a look at these tanks and approve an operating plan. As to what the State law is, I can't answer.

Mr. WELDON. And in terms of the actual criteria for design and operation of these tanks, I'm sure that when we hear from the industry people that they will tell us that there are extensive standards in place, whether they are NFPA standards, or ANSI standards, or whatever they are, I'm sure they're already in place. It's a question of making sure that a tank like this, which was a rebuilt tank, conform to the latest state-of-the-art standard that's in place and accepted by the industry.

The second point is, in terms of environmental response, and here's an area where I think there's been a haphazard approach by all levels of Government. We passed the SARA legislation in Congress a year or so ago, requiring local municipalities and local officials to plan. But in passing that, Congress didn't provide any funds to allow the men and women to be properly trained. And I would hope that in the case of either piece of legislation here that we include the funds to train the people that are going to have to respond to these emergencies, because it doesn't do any good to mandate training when we don't provide the resources for the local emergency officials to prepare and to preplan the events when they do in fact occur.

And I'd like to know, when we get to the State, what the role of PEMA was in this situation. Did they respond, what actions did PEMA take to preplan this type of event. We have an emergency management agency in Pennsylvania, and I'd like to know what their involvement was here. I haven't heard PEMA being mentioned yet, and I'd like to know whether or not they have any plan

in place for handling these kinds of situations. Do you know, Congressman, whether or not they were involved here at all?

Mr. WALGREN. I know they were on the site. But one of the significant hallmarks of this particular incident, is once it was done, it was done. And everybody essentially could not do much except stand around and look at each other, because the emulsifying of the river to the depth that it did, and not being able to turn off the river, there really wasn't any way to avoid the harm that was coming as it went downstream.

Mr. WELDON. The last thing I would mention is that is I think it's somewhat frustrating that we're hearing this story. I can recall, I guess, 10 years ago I was before a committee of Congress, down here testifying on an underground storage leakage that occurred under one of our refineries with LPG gas, and the lack of coordination in Federal agencies. We called the Coast Guard in to test the product bubbling up in the basements, and they brought in glass bottles to try to collect what in fact was a gaseous product. The EPA, when we called the National number, told us that they didn't work on weekends. And here we are 10 years later with the same type of lack of coordination and a lack of response.

Perhaps one of the things we should consider with your legislation would be the establishment of a National/Federal HASMAT response team, that would be available centrally located, or perhaps regionally located, that could respond instantaneously to these kinds of emergencies that would bring the expertise not just from the environmental standpoint, but the technical standpoint, the fire protection standpoint, the life safety standpoint, to have it available, because it's not available locally. And even if we do plan on a countywide basis, we don't have the kind of resources to meet that need, and perhaps that's something we could work into your bills. And I'd look forward to working with you in that regard.

And in closing, just thank both of you for the leadership role that you've taken in this issue.

Mr. FOGLIETTA. I thank you, Mr. Weldon.

Mr. Bunning?

Mr. BUNNING. Thank you.

I just would like to inquire of both members, does both of your bills include a grandfathering of existing tanks, or a reinspection of all tanks, no matter what size, on the Congressman's bill, and a specific size on the Senator's bill?

Senator HEINZ. In our bill there's no grandfathering. If a tank meets the criteria in terms of age or relocation, as long as it is of sufficient size, it will be inspected and tested.

Mr. WALGREN. And in ours we set out a three-year period for the initial inspection of all present tanks. And it's hard to see a real alternative, except to have a lot of tanks out there that we have no inspection, and, therefore, no real assurance of their condition.

Mr. BUNNING. And so I understand your bill, Congressman, who will sign off on the inspection? You're indicating that industry will pay for the inspection, who then signs off as a final person, or entity, in the certification of that tank being all right to use?

Mr. WALGREN. Either a State, if the State has asked for the ability to implement the program, meeting the minimum Federal standards and then some if they desire, or the Federal official. The

certified independent engineer would submit his report to either one of those government levels, and it would be filed and would be tracked as a filing that was essential, and if it is failed to be, caused to happen, the various penalties of the bill would lie.

Mr. BUNNING. Well, what I'm trying to get at is that if you do this over a period of three years, and these tanks have existing oil or storage in them, then you're going to require, if you find a flaw, that they be drained, and then they be taken down or reinspected? That's what I'm trying to get at. What's the procedure?

Mr. WALGREN. Well, I confess not to be a good enough engineer to know what the procedure would be if you found a structural flaw in a tank that had liquid in it. I gather then you would empty that tank in some reasonable time frame and correct it.

Mr. BUNNING. All right.

That's all I have right now.

Mr. FOGLIETTA. I thank the gentlemen.

Mrs. Bentley?

Mrs. BENTLEY. Thank you, Mr. Chairman.

Mr. Chairman, I ask unanimous consent to include a full statement in the proceedings.

Mr. FOGLIETTA. No objection.

[The statement of Mrs. Bentley can be found at end of hearing.]

STATEMENT OF HON. HELEN DELICH BENTLEY, A U.S. REPRESENTATIVE FROM MARYLAND

Mrs. BENTLEY. I just want to comment that I have a great deal of interest in this because we do have hundreds of storage tanks lining the Port of Baltimore, and of course, any spill there would go in the Chesapeake Bay. We have a great deal of concern should there be another accident of this type down our way.

I also want to say, Senator Heinz, that I'm glad that Battelle is the one who was asked to do the research on the cause. Battelle happens to have a division in my district, and they are a very, very fine organization. Their finding, I think, is particularly significant that this flaw apparently has been in that tank, Mr. Chairman, and that nothing happened before. So that needs to be probed into further.

Thank you, Mr. Chairman and Ms. Schneider, for this hearing. Thank the two gentleman for their leadership in the legislation that they've introduced.

Mr. FOGLIETTA. I thank the gentlelady.

And I thank both our witnesses, Senator Heinz and Congressman Walgren for their excellent testimony here.

Senator HEINZ. Mr. Chairman, thank you very much.

Mr. WALGREN. Thank you, Mr. Chairman.

Mr. FOGLIETTA. I call our second panel, and the members of that panel, if they are here, are Mr. Charles Jarvis, Deputy Assistant Secretary for Policy, Budget and Administration, Department of the Interior; Mr. Tim Fields, Director, Emergency Response Division, Office of Solid Waste and Emergency Response, EPA; Mr. James Seif, Regional Administrator, Region 3, EPA, Captain Robert Storch, Jr., Chief, Marine Environmental Response Division of the United States Coast Guard; and Mr. Anthony Davis, Secre-

tary, Pennsylvania Department of Environmental Resources. Are all those gentleman here today?

I understand that Mr. Harper is going to be replacing Mr. Davis, is that correct? Yes.

Welcome, gentlemen. And I would appreciate it if you could submit your full statements for the record, and if each of you would make a brief preliminary statement so that we can know just what your position is. Your prepared statements will be inserted immediately following your oral presentations.

I call upon Mr. Jarvis first, if I may.

STATEMENT OF CHARLES JARVIS, DEPUTY ASSISTANT SECRETARY FOR POLICY, BUDGET AND ADMINISTRATION, U.S. DEPARTMENT OF THE INTERIOR

Mr. JARVIS. Good morning, Mr. Chairman, members of the committee, and members of the House of Representatives. Thank you for the opportunity to brief you this morning on the Monongahela spill. I will be glad to provide the full testimony to be included in the record.

The Office of Policy, Budget and Administration of the Department of the Interior first has overall management responsibility for overseeing coordination of Interior participation and the responses under the National Contingency Plan of which Interior is a trustee. Second, the Department of the Interior assists in providing expertise to Federal and State natural resource trustees in assessing any natural resource damages which results from such spills. Third, the Department supports the trustees from the States and Federal departments and agencies, in implementing appropriate procedures to resolve any of those problems and to complete assessments and plans for resolving any difficulties that are discovered.

Interior responded to the Monongahela spill in accordance with the National Contingency Plan as a designated trustee and as member of the Standing Regional Response Team. We participated with the lead agencies, which in this case were EPA and Coast Guard on the Federal side. EPA has the major responsibility for certification and permitting operation of storage tanks, and Interior is not involved in that role, except on Interior lands, of course. The Interior Department does have a major responsibility in such incidents and was involved on a daily basis in assisting the State and Federal lead agencies in assessing the damages. The Department continues in that work, especially through the focused work of the Fish and Wildlife Service. Assistance to the States' natural resource agencies will continue throughout this process.

And let me say, briefly, that the Fish and Wildlife Service's responsibility, in this particular incident, includes both natural resource trustee and response roles. As a resource trustee, the Service first assesses any impact on Federally listed endangered species. One listed specie, the pink pearly mucket mussel, inhabits a somewhat localized area of the Ohio River 300 miles downstream from the spill area. And second, the Service assesses any injury to migrant birds and help to arrange staging operations for the Tri-State Bird Rescue Team in the affected area. As a response department, Interior assists in coordinating with various State agencies assess-

ing the extent of the spill and possible injuries to fish, wildlife, biota, drinking water, and other natural resources over which DOI has trust responsibilities.

We continue to work closely with the States involved and have now had responses from all six Governors of the affected States in the Ohio Valley, regarding their trustee designations. A meeting of the trustees in June is anticipated which will further focus all of the assessment efforts and provide a forum for sharing the scientific information which will be available hand from the EPA and the Fish and Wildlife Laboratories at that point.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Jarvis can be found at end of hearing.]

Mr. FOGLIETTA. Thank you, Mr. Jarvis.

We'll now hear from Mr. Fields.

Mr. SEIF. If it's okay, Mr. Chairman, I'm Jim Seif and——

Mr. FOGLIETTA. Fine, we'll go from left to right, or right to left, you may proceed.

Mr. SEIF. Thank you.

STATEMENT OF JAMES M. SEIF, REGIONAL ADMINISTRATOR, REGION 3, ENVIRONMENTAL PROTECTION AGENCY

Mr. SEIF. I'm Jim Seif, at EPA. My testimony is quite lengthy and already in the record, I understand. If I may, based upon that testimony and on comments made this morning, I want to emphasize four points, two very quickly, and two at some length.

I think it is correct to say that before January 2nd, Ashland Oil can be faulted for doing a number of things, if not wrong, then at least perhaps too quickly, and without the kind of care, that we now in retrospect know should have been exercised. It's equally fair to say that after January 2nd, Ashland has done almost everything right, in terms of facing up to its responsibility for immediate cleanup and for making citizens of the Monongahela and Ohio Valleys whole for the damage done physically to the waterway and to the drinking water supply. We'll hear from Ashland later, as I understand it, and I hope they'll be discussing those points.

The Environmental Protection Agency and the Commonwealth of Pennsylvania expect to enter into a consent decree within a week or so, with Ashland, covering a number of aspects of cleanup, compensation, future testing, and reopening of the facility. That's in final stages of negotiation right now. We'd like to make that available to the committee, if there's interest, when it's complete.

The second point, again quickly, is the need, in the regulatory area, to understand that no regulatory scheme, statute or regulation, can cover every contingency. The Spill Prevention, Control and Countermeasure Plan, which is mandated by present legislation, or any future legislation, must always be conscientiously and carefully customized by those who develop it, and applied initially and then day-to-day to all regulated facilities. It is simply not good enough to say we have complied on paper with whatever the statutory or regulatory scheme is, but to understand in each case how a given facility is different from any other facility.

Here the presence of a dam, a waterpipe on an adjacent property, and other specific situations should have caused a special plan to be developed, especially for this facility. And that did not happen. No amount of regulation would make people see that, except in retrospect one hopes that a lot of people who maintain these kind of facilities are doing that kind of examination right now.

Congressman Walgren and others have asked "Should we have Federalized this spill?" The decision not to do so was mine. I consulted with EPA Administrator Lee Thomas on a number of occasions, and he agreed. Eventually others did as well. Some very respected community leaders, including Congressman Walgren, Senator Heinz and Governor Bob Casey, immediately urged that the spill be Federalized. Let's try to understand what Federalizing the spill would mean.

It simply means a decision about who's going to pay for it. The fact is that this was not the Federal Government's spill. It was Ashland's spill. Ashland must pay for it, and will. The fact is that EPA did not assist or watch Ashland, we *directed* them. We were not passive. The Coast Guard was on site within hours, and then the following morning, EPA people arrived from Wheeling, which is our nearest location. We assured ourselves that the contractors in use by Ashland were the same contractors, using the same equipment and techniques, that we would have used. We assured ourselves that Ashland was doing everything that could be done in the same way we would have done it, and at our direction, and at the direction of other onsite people, including for example, the Pennsylvania Emergency Management Agency. We could not have improved on that.

Congressman Walgren makes a very good point, however, that the psychological appearance of who's in charge here matters to people. I think he's right. It would have been a great treat for me, as a Pittsburgh boy, to get on Pittsburgh television and pound the table, and say I'm in charge here, and we're going to make them clean it up. The reality was that we were in charge, we were making Ashland clean up, and hotdogging wouldn't have made it any quicker, or any different. It would have caused a serious problem, under the present regulatory scheme. In the event that a spill is declared Federal and taken away from an unwilling or incapacitated spiller, the Federal Government then sends a bill to the spiller. There's almost always a dispute about how the bill will be paid. In the event this spill had been taken over from Ashland, they would have had available the defense, given whatever we did, that they would have done it differently, and cheaper. Now, at a time like that I guess I wouldn't have been too concerned about depleting the Federal spill response fund, because it was a major spill. But in fact I do have stewardship over the fund, I do need to conserve it, and I did have a willing and able cleanup job going on. Others have since concurred that it was done right and done well, but I understand their desire to give an appearance that the Federal Government was in charge to go with the reality that it was in charge.

The regulatory scheme may well receive some committee direction and insight on that point, or Congressional direction on that

point, to clean up the dilemma that the on-scene coordinator and the Regional Administrator find themselves in when people are saying, "Federalize it," and in fact things do not need to be Federalized.

The final point I would like to make is that the response time is a matter of great concern to people who are overseeing events like this. We had, in darkness on a Saturday night, in frigid cold, a spill bigger than any that has ever occurred on an inland waterway. The last one of that magnitude, 20 years ago, was in a wetland in New Jersey. The river was high and fast at that point. We had two dams, one within a few hundred yards of the point of entry into the water, which emulsified the oil completely, as has been pointed out. We had a situation where, what was done, was done instantly, and not much could be recovered before the emulsification took place.

I think we also had, as you've perhaps seen in some of the pictures, a wave of diesel oil which dented a nearby tank, which did in fact have gasoline in it. When the first Allegheny County officials arrived, they saw the dent, saw broken pipes, smelled gasoline in the air, and were concentrating first on a massive evacuation that occurred, again, in frigid weather. So that time, which I think was time well spent, was also added to the response time. I think while, as Senator Heinz points out, you can put a microscope on any particular aspect of it, the whole mosaic fit together pretty well. And I'm proud of the role that EPA played in that team effort.

Mr. Tim Fields is an expert on the particular spill prevention, control and countermeasure regulations which are in place, and he's with me today.

[The prepared statement of Mr. Seif can be found at end of hearing.]

Mr. FOGLIETTA. Mr. Fields?

STATEMENT OF TIMOTHY FIELDS, JR., DIRECTOR, EMERGENCY RESPONSE DIVISION, OFFICE OF SOLID WASTE AND EMERGENCY RESPONSE, ENVIRONMENTAL PROTECTION AGENCY

Mr. FIELDS. Thank you, Mr. Chairman.

The SPCC regulations that we're discussing today were first developed in 1973, under the authority of Section 311 of the Clean Water Act. At the time that these regulations were first implemented in 1973, they were designed to be minimum requirements, or standards, for certain aspects of facility design, operation, and procedures. The program's requirements were designed at that time, and intended to provide flexibility for the more than 650,000 facilities that are covered by these regulations. The SPCC program regulates non-transportation related facilities that may reasonably be expected to discharge oil into navigable waters.

The regulations require that an SPCC plan be prepared within six months of commencement of operation and implemented within one year after commencement of operations. Whenever new tanks, or rebuilt tanks like the tank at Floreffe that ruptured, are installed at a facility, the plan must be amended at the time of the change and implemented within six months. That plan must be certified by a registered——

Mr. FOGLIETTA. Will the gentleman excuse me for a moment?

Mr. FIELDS. Yes.

Mr. FOGLIETTA. You referred to the tank that exploded as a new tank. Wasn't that a tank that had been——

Mr. FIELDS. A new or—the regulations talk about new or rebuilt tanks.

Mr. FOGLIETTA. It was a rebuilt tank we're talking about.

Mr. FIELDS. That's right.

Mr. FOGLIETTA. Thank you.

Mr. FIELDS. Thank you, Congressman.

The requirements are that that the plan, as amended, when a new or rebuilt tank is brought in place, be certified by a registered professional engineer.

Some examples of the facilities that may be subject to these regulations are refineries, bulk storage terminals, farms, office buildings, and schools. A broad spectrum of facilities are within that 650,000 plus facilities that are covered by these regs. As was indicated by the Congressman and the Senator, the precise number of these facilities is not known today. The estimate is being refined within the agency, and we're trying to get better data on the precise number of facilities subject to these regs.

When the January 2nd incident occurred, the agency concluded, obviously, that further investigation of this matter, and related Federal, State and industry programs should be initiated. So on February 2nd, Dr. Win Porter, EPA Assistant Administrator for Solid Waste and Emergency Response, formed an Oil SPCC Program Task Force. I was named to be chairman of that task force, and I was charged with the responsibility to develop findings and recommendations regarding program changes to better ensure that similar spills do not occur in the future, or that if a similar spill does occur, negative impacts on human health and the environment are minimized.

Dr. Porter requested that the task force provide him with a report by May 13th of this year. During the time between February 2nd and May 13th, we held four task force meetings. Those meetings were held on February 23rd, March 17th, April 14th, and April 28th.

During the course of the task force activities, four committees were formed. They were committees of the full task force. The four areas we looked at in some detail were as follows: one committee focused on a detailed review of the existing SPCC regulations; the second committee did a detailed review of existing State requirements in this area, other Federal regulations in place, and industry standards like API and NFPA; a third committee focused on actual EPA program implementation of the SPCC regulations, the inspection procedures and response procedures; and a fourth committee focused on the question, we talked about earlier, of an actual tank inventory, what data do we have available regarding age, size, numbers of these tanks by State, region, et cetera. Committee reports were presented at each task force meeting and discussed in detail.

The task force itself was comprised of over 60 members, including representatives from all the EPA regional offices, various EPA headquarters offices, and Federal agency representatives from the

U.S. Coast Guard, DOT's Office of Pipeline Safety, the Minerals Management Service, the Occupational Safety and Health Administration, the National Bureau of Standards, and other Federal and State agencies, particularly Pennsylvania and Ohio, who were involved in this task force. The large membership of this task force allowed us to examine numerous issues and to compare spill prevention programs in other organizations with EPA's existing SPCC program. For example, the nine States that have SPCC-type programs at the current time. The information gained has provided us at EPA, and the other Federal agencies and State agencies, with many new insights about how this program ought to be managed in the future.

During the preparation of the Task Force Report, I and my staff had meetings several times with representatives of the American Petroleum Institute, the National Bureau of Standards, Ashland Oil Company, and Region 3's Regional Response Team Personnel. All four of those organizations also have task force efforts underway to evaluate where this program ought to go in the future. These groups are all preparing reports on the Ashland Oil Spill and its aftermath. Advice, thoughts, and comments were solicited from each of those groups on our task force efforts.

Finally, on May 12th of this year, I briefed Dr. Porter on the findings and recommendations of our task force, and on May 13th, as we had committed, we provided him with a final report providing findings and recommendations on the task force effort. That task force report is currently undergoing internal agency review. We'll be happy to share with you our plan of action once final agreement is reached on the task force final report.

Thank you, sir.

[The prepared statement of Mr. Fields, can be found at end of hearing.]

Mr. FOGLIETTA. Thank you, Mr. Fields.

Captain Storch?

STATEMENT OF CAPTAIN ROBERT L. STORCH, JR., CHIEF, MARINE ENVIRONMENTAL RESPONSE DIVISION, UNITED STATES COAST GUARD

Captain STORCH. Mr. Chairman and members of the committee, I am Captain Robert Storch, Chief of the Coast Guard's Marine Environmental Response Division at Coast Guard Headquarters. I am pleased to appear before you today to discuss the Coast Guard's role in response to the major oil spill which resulted from the 2 January, 1988 Ashland Oil Company accident.

The National Oil and Hazardous Substances Response System is the Federal Government's mechanism for emergency response to discharges of oil into the navigable waters of the United States, and releases of chemicals into the environment. This system functions through a network of interagency and intergovernmental relationships.

The party responsible for a pollution incident has the liability for its cleanup and disposal; and should initiate appropriate actions. When appropriate action is being taken by the responsible party or

the State or local government, the Federal Government may monitor the situation.

When the responsible party is unknown, unwilling or unable to respond properly and an incident exceeds the capabilities of the State and local governments, the activation of Federal response resources may be appropriate. The relationships among various on-scene authorities are best addressed through preplanning and contingency plans.

The Federal system is described in a Federal regulation, the National Oil and Hazardous Substances Pollution Contingency Plan. It establishes three organizational levels: The National Response Team, of which I am the vice chairman; regional response teams; and on-scene coordinators.

The Coast Guard responded to the Ashland Oil Company accident consistent with the various provisions of the Clean Water Act, the National Oil and Hazardous Substances Pollution Contingency Plan, and a memorandum of understanding between the Coast Guard and the Environmental Protection Agency. According to the National Contingency Plan, a Federal predesignated on-scene coordinator is assigned to ensure that appropriate action is taken whenever there is a discharge of oil into the navigable waters of the United States, or a release of hazardous substances into the environment. The local Coast Guard Captain of the Port serves as the predesignated on-scene coordinator for pollution incidents occurring in the coastal zone. The coastal zone is comprised of waters in the Exclusive Economic Zone, extending approximately 200 miles offshore, the Great Lakes, and specified ports and harbors on the inland rivers. The boundary between coastal and inland zones is defined in each regional contingency plan.

The EPA provides predesignated on-scene coordinators for the inland zone. In accordance with the Coast Guard/EPA memorandum of understanding, the local Coast Guard Captain of the Port is the predesignated on-scene coordinator for all discharges of oil and hazardous substances which result from vessel casualty or vessel transfer activity within specified ports and harbors of the inland river system. The Coast Guard does not normally serve as the predesignated on-scene coordinator for discharges which occur at industrial facilities, bulk storage facilities, hazardous waste sites, or non-marine transportation casualties in the inland zone. However, operations and resources permitting, the Coast Guard will, at the request of EPA provide assistance and act as the first Federal official on-scene for those major incidents which occur in the inland zone that require immediate Federal response.

The on-scene coordinator's objective is to ensure rapid, efficient mitigation of actual or threatened pollution releases and discharges. The Coast Guard policy is to ensure that timely and effective response action is taken to control and remove discharges of oil and releases of hazardous substances, including substantial threats of discharges and releases into the coastal zone, unless such removal actions are being conducted properly by the responsible party. As the single Federal official responsible for ensuring proper pollution response and enforcement, the on-scene coordinator is the most important component in the National Response organization. The on-scene coordinator shall use appropriate legislative and regu-

latory authorities, the National Contingency Plan, regional and local contingency plans, and other circumstances unique to each incident to ensure that pollution response is carried out expeditiously and aggressively.

The Coast Guard Marine Safety Office in Pittsburgh received a report of an oil spill at Ashland Oil Company, Mile 21 on the Monongahela River, at 7:00 p.m., 2 January, 1988. Further telephone investigation revealed that an Ashland Oil Company oil storage tank collapsed and released approximately four million gallons of diesel oil. The instantaneous release caused approximately one million gallons of diesel oil to flow over the containment dike, spilling into drainage ditches from which the diesel oil continued into the Monongahela River.

Coast Guard Marine Safety Office, Pittsburgh, immediately notified all appropriate Federal, State and local interests. The EPA Regional Office in Philadelphia was informed that the source of the spill was an oil storage tank. EPA Region 3 requested that the Coast Guard respond as first Federal official on-scene and indicated that EPA would assume the duties of on-scene coordinator upon arrival. MSO Pittsburgh requested assistance from the Coast Guard's National Strike Force and closed the Monongahela River between Mile Zero and 24 to marine traffic.

Ashland Oil Company assumed financial responsibility for the cleanup and promptly contracted two cleanup companies. An initial plan for oil recovery from the river was completed during a meeting of representatives from the Coast Guard, Ashland Oil Company and the two cleanup companies. The plan included the deployment of 10,000 feet of containment boom at two primary locations on the Monongahela River.

EPA Region 3 assumed on-scene coordinator on January 3, and requested Coast Guard Assistance in monitoring oil recovery in the river. Coast Guard National Strike Force personnel arrived at 1:15 p.m., January 3rd, and immediately conducted an overflight of the spill area. National Strike Force personnel discovered that the speed of the current in the river had reduced the effectiveness of the containment boom. They recommended that the boom be deployed such that the oil in the river would be deflected toward natural containment areas in the river to facilitate removal. This proved more effective.

The deflection booms were unable to reach the oil that floated down the middle of the Monongahela and Ohio Rivers, and the deflection booms were ineffective in containing the oil that flowed down river below the water's surface. Thus, a large portion of the oil proceeded down river making the primary concern the protection of public water supplies. Coast Guard National Strike Force personnel assisted the City of Wheeling, West Virginia, by pumping fresh water into the Wheeling Water Treatment plants. Water was pumped from an unaffected fresh water creek into tank barges, and then the barges were off loaded into the water treatment plants. Air deployable anti-pollution transfer system pumps provided by the National Strike Force were used for this operation and were funded by Ashland Oil.

The Coast Guard assisted the EPA in another important area, public relations. A member of the Coast Guard Public Information

Assist Team, trained in both media relations and pollution response, arrived in Pittsburgh on January 3rd and responded to a flood of media and public interest requests for information specific to the incident.

During the incident the on-scene coordinator had access to the Coast Guard-Administered Pollution Fund, established in Section 311(K) of the Clean Water Act for removal of spilled oil, in case the responsible party failed to take appropriate cleanup actions. Since the on-scene coordinator determined that Ashland Oil Company had acted responsibly during this incident, there was no need to access the fund.

However, Mr. Chairman, the conduct of the discharger in this case in no way diminishes the strong need for oil spill liability and compensation legislation similar to that which this committee has endorsed in H.R. 1632, which, as I understand, presently resides in the House Committee on Public Works and Transportation. We badly need comprehensive legislation with higher limits liability, not only for onshore facilities, but especially for tank vessels. In fact, this bill clearly highlights the need for legislation by illustrating what can happen and might happen again. Regardless of how Ashland handles the inevitable third party damage claims, we do not believe that it is adequate to rely on the good will of a discharger to satisfy damaged parties, restore natural resources, or to finance a fully satisfactory cleanup.

In the Philadelphia area, local contingency plans have been developed by the Coast Guard Captain of the Port, with the assistance of appropriate State and Local agencies, in which the Captain of the Port, Philadelphia, has identified several high risk areas with above ground storage tanks. The risk is highest along the Delaware and Schuylkill Rivers, due to the number of oil refineries located in these areas. Water supplies would be affected should a major incident occur because of water intakes located along these rivers. However, this threat is no greater than in any other coastal, river or lake community which either transports, refines or stores large quantities of petroleum products or hazardous chemicals.

This completes my opening statement. Thanks.

Mr. FOGLIETTA. Thank you.

I would like to ask Mr. Harper for his statement, please.

STATEMENT OF SAMUEL HARPER, BUREAU OF WATER QUALITY MANAGEMENT, PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Mr. HARPER. Mr. Chairman and members of the committee, my name is Samuel Harper, from the Bureau of Water Quality Management, Pennsylvania Department of Environmental Resources. I would like to extent the regrets of Arthur Davis, Secretary of DER, who could not be here today because of a prior commitment. I appreciate the opportunity to appear before you today, and welcome the committee's interest in examining Federal policy in the light of our recent experience with the Ashland Oil tank collapse.

Just over four and a half months ago, on January the 2nd, an estimated 3.7 million gallons of petroleum products from a tank at the Ashland Oil Company facility in Allegheny County, Pennsylva-

nia spilled oil into the Monongahela and Ohio Rivers, seriously threatening public water supplies and affecting the natural and economic resources of Pennsylvania, West Virginia and Ohio. The full environmental impact of this event may not be known for some time.

Governor Robert P. Casey has named DER's Chief Counsel, Keith Welks, to lead a Tank Collapse Task Force that will be thoroughly reviewing the causes of the spill. The task force is investigating the physical causes of the accident and issues of responsibility. The task force will also be making specific recommendations for improving State programs to prevent such an incident in the future. A separate review by the Pennsylvania Emergency Management Agency, PEMA, is evaluating the efficacy and speed of the disaster management responses.

Within approximately 25 minutes of being notified that a spill had taken place on January the 2nd, the DER water quality specialist was on scene to assess the problem.

We received notification of the spill from the Pleasant Hill Hazardous Materials Response Team which was responding to the incident. Ashland Oil itself never formally notified the Department of the spill, although the company did notify a number of other agencies including the National Response Center.

Our first inspection of the site traced the spilled diesel fuel from the diked area of the Ashland property to the point it entered the river through property owned by Duquesne Light Company. Duquesne Light was able to quickly implement its own spill preparedness plan and alerted downstream water uses of the diesel fuel spilling into the river.

From about 10:30 p.m. Saturday evening through early Sunday morning, direct access to the Ashland property or adjacent areas was not permitted by local fire authorities. They were concerned that gasoline reportedly spilled during the incident would ignite. In fact, the first non-fire fighting authorities allowed on the site after our initial inspection were Lt. Governor Mark Singel and officials from DER who few from Harrisburg before dawn to directly coordinate the State's response to the spill.

DER staff worked closely with local fire authorities to stabilize the diesel fuel on the site and with the Allegheny County Health Department to provide additional warnings to drinking water suppliers downstream as more information about the size of the spill became available. Darkness hampered efforts to respond to the spill during its early hours.

Throughout the night DER staff worked with the Coast Guard, Pennsylvania Fish Commission and Ashland Oil to organize containment and cleanup operations. From the very beginning, however, it was clear to our staff and to the contractor brought in by Ashland Oil that containing a spill of this size was beyond the immediate resources of the companies and local and State governments.

Lt. Governor Mark Singel and officials from DER continually pressed Ashland Oil, the Coast Guard and EPA to devote federal resources and the proper equipment to containing the spill. To demonstrate the size of the problem, we took Coast Guard representatives in a State Police helicopter to survey the spill. But DER

actually had to commit the state to underwriting the cost in order for EPA to allow the Coast Guard to bring in the specialized spill containment equipment and personnel that was clearly needed.

Samples of river water taken and analyzed by DER first identified the diesel fuel/water emulsion problem that was to threaten the water supplies of over 800,000 people in Pennsylvania. DER staff, working with the Pennsylvania Emergency Management Agency, the individual water suppliers and affected counties, took the lead role in dealing with the drinking water problems that resulted from the spill.

DER staff from several parts of the agency helped to respond to the drinking water emergency. We constantly monitored the location of the diesel fuel/water emulsion in the river in relation to water intakes, took raw water samples at river intakes and at the ten systems with well fields close to the river for any signs of contamination. As many as 200 water samples a day were processed by our laboratory that worked around the clock.

The team work of DER, the counties, the water suppliers and PEMA prevented any actual contamination of drinking water collection and treatment systems using either the Ohio or Monongahela Rivers as a source of water. We are, of course, still monitoring these systems, as well as water supply wells near the river to make sure they remain safe.

Water suppliers relied on a combination of water conservation, reserve wells, interconnections with other systems, full use of limited capacity and innovative water treatment to get through the crisis. The incident clearly demonstrates the value of establishing interconnections between water systems that can be used in times of emergency.

The individual water users—homeowners and businesses—deserve most of the credit for getting the water systems through water shortages. Without the cooperation we received with the mandatory water conservation order issued by our Pennsylvania Emergency Management Council, the number of water customers without service would have been much higher.

DER drinking water system specialists worked very closely with water suppliers to develop an experimental treatment process—literally overnight—to safely treat diesel fuel contaminated water. This process is being used by water suppliers in other states that had these same problems as the spill moved down river. This extra effort by DER staff made it possible for water suppliers to open their river intakes before it would have been otherwise possible.

Responding to the spill in this way required considerable mobilization of State resources. DER alone had over 50 people working full-time on the spill at the height of the incident with operations going around the clock. This is to say nothing of the other State agencies, county agencies, hundreds of volunteers, private businesses providing bottled water and tankers, and the area media.

DER's investigation of ground water and soil contamination at the site of the spill will be continuing for some time. Monitoring wells have been installed on the site to obtain detailed ground water and geologic information. Soil sampling is also being conducted onsite. The site investigation is being directed jointly by

DER and the Environmental Protection Agency, and financed by Ashland Oil.

In addition, we will have to continue water quality monitoring and river surveillance to identify potential impacts on downstream water users and stream bank areas that must be cleaned up by Ashland. We also expect to find oil accumulation in coves along the river that must be identified and cleaned up. Tons of contaminated soil will have to be removed along the river bank.

We will continue sampling water supplies, both surface intake and riverside ground water sources, to ensure that there is safe water for public use. Our initial results from the monitoring wells indicate that there has been ground water contamination. Further investigation must be done to determine the precise extent of the contamination and then how it can be cleaned up.

We know some of the impacts this spill has had on the environment: soil and ground water contamination at the site itself, temporary water shortages, loss of fish and waterfowl. In addition, the economic impacts, businesses which had to close, loss of revenue from river commerce, are significant. Less tangible, but important nonetheless, is the adverse change in public perception about the improvement in water quality in the Monongahela and Ohio Rivers.

The longer-term environmental impact may not be known for some time. We support efforts to have the Ohio River Valley Water Sanitation Commission, ORSANCO, coordinate the studies needed to determine what impact the spill has had on river ecology.

ORSANCO is in the middle of a two-year comprehensive study of the Monongehela River. Last summer they completed a baseline study of river water quality. The second phase of that study will be conducted this summer. The analysis of the information they called should give us clues to the longer-term impact of the spill. We expect to work closely with URSANCO, the Pennsylvania Fish and Game Commissions and EPA to complete the assessment of environmental damage over the next few months.

Under the State Clean Streams Law, facilities like the bulk storage area in Jefferson Borough, of Ashland Oil, are required to have Preparedness, Prevention and Contingency Plans, called PPC plans. According to our best estimates, there are approximately 6,500 bulk storage tanks of 50,000 gallons or more in size in Pennsylvania that must comply with the PPC plan requirements. The Department is notified of approximately 10 to 12 leaks from bulk storage tanks each year.

Chapter 101 of our regulations contains the PPC plan requirements and a manual the Department distributes contains detailed guidance on what the plan must contain. The regulations and the PPC plan require companies to do several things: Number one, take precautions, such as diking to prevent oil and other products from getting into rivers and streams. Number two, have the ability either directly or through a contractor to clean up any spills that could result from leaking tanks. And number three, have a plan for notifying local emergency response officials and DER of a spill, if one occurs. Though these plans are required, the Department does not have the resources for routine review of plans and inspections of tanks.

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In the case of Ashland Oil, the PPC Plan for the site was inadequate. The Plan was originally prepared in 1970 and was outdated. We have already told Ashland Oil the Plan does not meet current standards and must be updated. We are conducting a complete review of all the DER requirements Ashland Oil may have violated in allowing this spill to take place including the PPC Plan and notification requirements. We will be recommending appropriate penalties for these violations after our investigation is complete.

For recommendations, at this point it is difficult to give you a comprehensive set of recommendations on what can be done to prevent a spill like this in the future. The investigation of the Governor's Tank Collapse Task Force should result in a number of specific recommendations we will gladly share with the subcommittee.

However, we have begun to look at several broad areas where there is interaction between State and Federal Governments.

Number one, concerning regulating storage tanks, Department staff are in the process of developing State legislation to regulate underground storage tanks in line with new Federal requirements in this area. At present, the State fire marshall administers some aspects of regulating storage tanks, both underground and above ground, except in Allegheny County, the Pittsburgh area, and the City of Philadelphia, which have their own programs. We are also reviewing our PPC plan requirements to deal with sudden tank failures.

We urge Congress to direct EPA to develop National minimum requirements to ensure that new and relocated above ground storage tanks for petroleum and other hazardous substances are designed and installed so as not to endanger public health and safety. Enforcement should be delegated to States with programs at least as stringent Federal requirements, and Federal assistance should be available for program development and implementation.

In the area of emergency response, in any spill response, time is of the essence. In many circumstances, actions taken immediately can change the character of the incident from disaster to a contained cleanup.

In this case the initial response of Federal agencies to this incident was hampered by the fact EPA and the Coast Guard had to work through Ashland, as the responsible party, to get approval for any action they needed to take. Either through administrative action or legislation, the Coast Guard and EPA must be in a position to help State and local governments much more quickly in a spill of this magnitude. Federal agencies must be able to fully utilize the contingency funds available to them. We ask that Congress direct that the National Contingency Plan be revised so as to make Federal funds automatically available whenever there is a major discharge whether or not a responsible party is identifiable and cooperative, or a spill which presents an immediate threat which could affect two or more States upon the request of the affected Governors or their representatives on the Regional Response Team, or a spill that affects one State upon the agreement of the Federal on-scene coordinator and the Governor's representative to the Regional Response Team that immediate action is necessary to protect public health and the environment.

We also urge Congress to enact legislation with minimum standards for the cleanup of spills which also provide that the cleanup meet anymore stringent standard required under State environmental law.

In the area of oil spill liability, we support legislation which would establish a Federal petroleum spill compensation fund, similar to Superfund, to pay for cleanup and response costs and for compensation for natural resource damages. The legislation should establish the standard of unlimited liability for the responsible party. As with Superfund, if monies from the fund are expended, the Federal Government should recover these funds from the responsible party.

Pennsylvania's participation in responding to this incident has demonstrated that we must improve the prevention, emergency response and cleanup of hazardous substance spills, including petroleum products, by Federal and State governments. These accidents speak to the need for further definition of Federal-state relationships in preventing and responding to accidental discharges. Questions remain regarding the Federal decision making process during the initial stages of response and issues remain regarding liability, since the full economic impacts of this incident have yet to be measured.

This spill brings home the ultimate vulnerability of urban areas to massive disruption from the industrial activities our society demands. It has demonstrated the absolutely critical need for quick action for containment and cleanup. We urge you to take these lessons to heart as you consider improvements to Federal prevention and response policy this year.

Thank you very much.

Mr. FOGLIETTA. Thank you, Mr. Harper.

The first question is for Captain Storch. Captain, the Coast Guard has been given a major responsibility in this Country's war on drugs. Will you please comment on how this responsibility has shifted the focus of resources of your agency, specifically in terms of the Coast Guard Emergency inventory?

Captain STORCH. Mr. Chairman, with respect to the Coast Guard Emergency inventory, I believe that you're referring to the reference that was made during the first panel meeting about an inventory that was done away with as a result of budget cuts. We refer to that as SKIM, which is an acronym for a pollution response inventory activity.

In that context, over the last couple of years of budgetary demands on the Coast Guard, we looked at that inventory and realized that the way we had that inventory set up was to ask the regional response teams to provide us with inventory information which we would then compile and give right back to them, which didn't seem to be a very effective way of dealing with that inventory. And so we identified that as what you might refer to as a management improvement. What we did was made one last update of the inventory, turned it back to the regional response activity in the Coast Guard which is at the district level, and put the responsibility on the regional response personnel for maintaining that inventory, which in fact they had been maintaining all along.

In addition to that, the two strike teams that the Coast Guard has, one in Mobile, and one in San Francisco, have a copy of the spill control inventory. But our doing away with that inventory was driven by budget considerations. As we looked at those considerations, we recognized that we were probably more efficient in having that inventory at the regional level, since that's where the information is needed. Those are the people who we were in effect going to turn around and give it back to.

Mr. FOGLIETTA. You're saying, therefore, that you have the wherewithal to fulfill your responsibilities in these emergency situations?

Captain STORCH. Yes, sir.

What I'm saying is that in conjunction with the requirement to have a regional contingency plan, there is a requirement in that plan to be aware of the inventories available within the region. Also the Coast Guard Captains of the Port, who are predesignated on-scene coordinators, are required to maintain a local Federal contingency plan which is a subset of the regional plan for their specific zone of jurisdiction. And in that plan one of the factors that they are supposed to take into account is the availability of cleanup contractors and cleanup equipment in the local area.

Mr. FOGLIETTA. I thank you, Captain.

Mr. Seif, you stated earlier in your testimony that Ashland has done everything right since January 2nd——

Mr. SEIF. Almost everything.

Mr. FOGLIETTA [continuing]. Isn't the fact that Ashland did not inspect this particular tank until after the spill, and actually that was not in violation of the regulations because the regulations allow six months for that kind of a inspection?

Mr. SEIF. Well, I don't believe the regulations require an inspection of tank integrity at any time. They do require the filing of a spill prevention, control and countermeasure plan within six months of the installation of a new tank. The six months had not run by the time the spill occurred here. The filing of that plan did occur within the six months.

But as you imply, that is a loophole in the regs, it gives a six month period during which a tank may be in operation as this one is——

Mr. FOGLIETTA. Before the plan is filed?

Mr. SEIF. Before the plan is filed. Now, the plan may have been completed in substance before that, but the reality is that even a plan that had complied with all of what the regulations say, could not have prevented the kind of massive spill that occurred here—dike height and all that sort of stuff.

Mr. FOGLIETTA. That leads to two questions. Do you believe that there should be a regulation for pre-inspection, number one? And number two, what do you think about the six month hiatus here, allowing that much time to elapse before the requirement of the plan is required?

Mr. SEIF. On the latter question, I think Dr. Porter's task force, as described by Mr. Fields, will be addressing those kinds of, as you call them, loopholes. That is in my opinion, I guess I agree with you, a loophole. I would say, however, that you don't want to have mere speed in the filing of a plan. You want it to be a good one, a

customized engineering job suitable to that site. And if it takes longer than immediate, I'd like to give that amount of time. I don't know that it should be six months.

Mr. FOGLIETTA. How about the first part of the question, namely should there be pre-inspections?

Mr. SEIF. Pre-inspections, but probably not by EPA inspectors. They're simply——

Mr. FOGLIETTA. Certification that they had been done, is that correct?

Mr. SEIF. I do favor the approach that best management practices, or best engineering practice—which most companies, I think, as Mr. Weldon has pointed out, do anyway—might well find their way into regulation, and that would assure that there are no laggards in doing it.

I must say, that for most petroleum companies, the track record is good, compared to many other areas that I know of. They already undertake those kinds of management practices.

Mr. FOGLIETTA. I thank you, Mr. Seif.

Mr. Fields, how many above ground storage tanks are there in this country at the present time?

Mr. FIELDS. There are an estimated 675,000 of these above ground storage tank facilities subject to the SPCC regulations, based on an estimate. We really believe that an inventory needs to be done to get more and better data regarding precisely how many there are, and one of the recommendations we made to Dr. Porter was that an inventory be done to quantify numbers of sizes of various tanks, age of tanks, locations of tanks, et cetera. We relied on the best information we got, for example, some states have done surveys, and some industry groups have provided some information. But we don't have a precise inventory of the tanks in this country.

Mr. FOGLIETTA. If you don't have a precise—well, let me ask you this. How many SPCC plans have been filed or submitted?

Mr. FIELDS. We don't require the submittal of SPCC plans to us unless certain circumstances happen. The regs obviously mention that if two spills occur, within a year, that the Regional Administrator has the authority to request that the plan be submitted to the Region for review. If we detect a violation like the Ashland Oil situation, we can require that the plan be submitted to us for our approval. We don't generally have the 650,000 plus facilities out there to actually submit the plans to us for our review. The regs require that those plans be maintained on file and available for our review upon request.

Mr. FOGLIETTA. There seems to be so many discrepancies, loopholes, in these regulations. Number one, you say that a plan doesn't have to be filed unless two spills occur, number one? Number two, you don't know exactly how many tanks exist, so how, therefore, can you know which of these have fulfilled the requirement?

Mr. FIELDS. Well, it's clear—I agree with Mr. Seif's statement—that there are loopholes in the regs. The task force that Dr. Porter formed approximately 90 days ago, and which provided a report to him, included as one of the major recommendations we made to

him, Mr. Chairman, that there are numerous changes that need to be made to the existing regulatory structure.

The two points you asked Mr. Seif about earlier, we are looking, for example, at changing the six month requirement, and for example, for larger classes of facilities, requiring that some sort of pre-approval be gotten by EPA prior to implementing the SPCC requirement for that new tank or rebuilt tank being put in place.

We agree with you that there are some loopholes here that need to be fixed, and the agency will be making appropriate changes in a lot of these different areas. And the inventory you mentioned is a major problem. I've been advised by my legal counsel that we do have the authority under the existing authorities of the Clean Water Act to require, by regulation, that the industry subject to these regulations notify us. We could put a notification requirement in the regs, and have those people notify us that they are in existence, that they are subject to these regs, et cetera. We do think that's a real need.

Mr. FOGLIETTA. All right.

So therefore, you believe that there should be some recodification of the regulations, some alterations, some changes for these regulations? And you're stressing the early planning, early inspections of these facilities, is that correct?

Mr. FIELDS. That's right, for certain classes. We don't believe that all facilities ought to be regulated the same way. I agree with the Congressman earlier who indicated that the SPCC program, in general, has worked fairly well over the last fourteen and a half years. We believe, though, that certain larger facilities that have the opportunity to cause a greater environmental impact ought to be regulated more stringently. We think that for certain larger facilities, there may be a need to be some sort of pre-approval of the plan for those large classes of facilities.

Mr. FOGLIETTA. Is there a difference in the regulations as to what your authority is and what you're required to do? And if you exerted that authority rather than only what you were required to do, would you then be inspecting all of the tanks?

Mr. FIELDS. Well, let me try to answer. I'm not sure I can answer your question directly, but let me try.

The current Clean Water Act authority under 311, 308, and other provisions of the Clean Water Act, allow us to go quite a bit further than we currently go in regulating above ground storage tanks. We can actually, for example, regulate the materials of construction, placement, design, operation of these above ground storage tanks under the existing legislative authority, if we believe that that's necessary to prevent spill prevention. The legislative authority is there now for that.

The current regulations don't go that far, obviously. The current regulations only provide advice or guidelines regarding particular operation of a tank. The regulations say you should do integrity testing. The regulations say you should have a failsafe engineerd design. The regulations don't require that. We have the legislative authority to actually require those things be done. We have not exercised, in our current regulatory scheme, the full authority that we have by the law.

Mr. FOGLIETTA. Finally, I would just like to note for the record, that on April 5th, I did write to the Administrator Thomas regarding many of these questions.

With that, I'd like to turn the questioning over to Mr. Curt Weldon.

Mr. WELDON. Thank you, Mr. Chairman.

And I want to take this opportunity to thank the gentlemen for their expert testimony, and in particular, welcome Mr. Seif to Washington. You've done a commendable job with limited resources, Jim, and running the regional office, and I appreciate your leadership there in the Philadelphia region.

Mr. SEIF. Thank you, Congressman.

Mr. WELDON. My first question—and really, I'm going to pursue the two different avenues, because I think there really are two separate and distinct issues here. The one being, the regulation of these types of vessels, and whether or not there is a Federal responsibility and role there. And the second is the environmental and emergency response.

On the regulation of these types of vessels, I'm hearing, and maybe perhaps I'm hearing wrong, but I'm hearing that no one has that jurisdiction today, and no one, in fact, is doing that. Now perhaps my memory has left me, but I can recall when I was the mayor of my hometown that the Department of Labor and Industry in Harrisburg, had that responsibility. And in fact, had to certify these types of vessels when they were constructed, and issue permits. Was this not the case, or is this not the case today? Can anyone answer that for me?

Mr. SEIF. I don't know what the State authority is. I know that the county had a permit system, about which there was some dispute immediately following the incident. Did they have a permit to do this, and if they did, are they home free in a negligence sense? And the fact is that the permit system in the county was a revenue system, and no inspection was triggered by the filing of even an application or the issuance of a permit. So, that level of jurisdiction probably did not.

In terms of State jurisdiction, perhaps—I have not heard of any L and I presence here, but perhaps the State representative could help.

Mr. HARPER. My understanding of the circumstances as they exist today in Pennsylvania, is the State Police Fire Marshal has the authority to regulate both above ground and below ground storage tanks in Pennsylvania.

Mr. WELDON. Right.

Mr. HARPER. And they do that. However, they do not have the expertise to investigate the structural stability of these vessels. They can do that, they just don't have the expertise.

Mr. WELDON. I was aware that the State Fire Marshal had some jurisdiction. I thought that it was only up to a certain size, and then his jurisdiction was no longer in place. But I was under the impression that with any industrial facility that the Department of Labor and Industry had a responsibility to at least sign off on construction.

And for the record, Mr. Chairman, I'd like us to get that answer on this particular situation, whether or not L and I in Pennsylva-

nia has that responsibility, and whether in fact they carried out their responsibility before this tank was built. Because the real question here was, here is a tank that was being relocated, and whether or not there was any jurisdiction to inspect that facility, or that tank, before it was actually filled with a liquid product, whatever it happened to be, in this case, fuel. And perhaps I'm wrong, but I thought L and I had that responsibility, and I don't expect you, as a DER rep, to understand that.

Mr. HARPER. Well, I can say I never heard anybody mention them in any of the discussions that I've been involved in since this incident happened.

I might just say, that in Allegheny County, and in Philadelphia, they each have their own program under that State Police Fire Marshal.

Mr. WELDON. I think at a minimum, if we're going to have certification here, we can't expect local building inspectors and local county, or local township agencies to be able to inspect and certify the integrity, structural integrity of these kinds of vessels. That's just beyond their scope and realm.

I think, at a minimum, if we're going to have a certification process, it's got to be at the State level, and I guess I would ask you, Mr. Seif, you seem to think that the EPA can, in fact, provide that certification but it can't do it itself would have to rely on the certification provided by the company in constructing the tank, is that correct?

Mr. SEIF. I think that's right, for much the same reasons you cite for State and local officials: the metallurgists aren't cheap. We're finding that out with any number of specialists.

Mr. WELDON. To get a feel for the frequency of this kind of an incident, to my understanding, or to my own knowledge, I've never heard of another structural failure like this, at least in the area that I'm from, which is heavily inundated with these types of tanks. I've seen tanks hit by lightening. I've seen fires. I've seen tanks collapse because of the heat generated from a fire, as we saw in Philadelphia at the Arco Plant. But I am not aware of a tank of this size structurally collapsing on its own.

Are any of you aware of any other incidents and what the frequency would be? And I'll ask the same question of our industrial people when they come in.

Mr. SEIF. I think I mentioned the total collapse of a tank in New Jersey, in Northern New Jersey, in 1969. And I think it's about as rare as it possibly can be. Indeed, if the Battelle report, which we may hear more of this morning, is correct, it's not clear in my mind that even the kind of inspection that you'd love to have everywhere if you wanted risk free operation, would have found the problem. It wasn't a popped rivet, it was a 40-year weakness which was made manifest by perhaps the weather, and certainly by the relocation.

I have to agree, luck was with us. It was a freakish accident that occurred at a time and place where it could be handled a little better than it might have been elsewhere.

Mr. WELDON. On the technical aspect—we've covered that now—I guess the other area is the containment area that is required around these tanks. Are we saying that EPA currently has that as

a part of the SPCC requirements that there be a containment area, and if so, is the containment area expected to be twice the volume of that tank, or three times the volume? What is the requirement in terms of the containment around tanks?

Mr. FIELDS. Well, the regulations require that the secondary containment area around a tank farm be——

Mr. WELDON. Around a tank farm or a tank, an individual tank?

Mr. FIELDS. Well, if you've got a tank—it varies. If you've got one tank at a facility, the regulations say you've got to have sufficient containment to contain the volume of the contents of that tank.

Mr. WELDON. Just the volume of the tank?

Mr. FIELDS. Right. If you've got several tanks in a tank farm, the regulations require that the containment be adequate to contain the volume of the largest tank in that area. Not all the tanks, but just the largest tank.

Mr. WELDON. If I'm correct in reading, I guess it was the testimony of Mr. Seif, that in the investigation that was done, one of the findings was that the containment area was not enough to handle the tank itself, is that correct, it was not, or was?

Mr. SEIF. Well, what you had here, given the nature of the collapse was, a 40-foot high wave—and you can see marks in other pictures on adjacent tanks—such that even where the volume was sufficient, "slosh" was such that it carried on. And you can see in pictures, concrete pumphouses being demolished, or having been demolished and moved.

So again, to plan against this kind of spill, you would need walls as high as the tank close by.

Mr. WELDON. Or further out?

Mr. SEIF. Or sufficiently far out so that the wave would have diminished.

Mr. WELDON. I assume that there's a standard for these types of tanks. It must be an API standard, and I guess we'll hear that from the industry when they come in. I'm sure it's a very acceptable standard, today, used Nationally.

In terms of the inventory of these types of facilities, Nationwide, I was under the impression that this would be already required under SARA legislation, that these are hazardous locations and under the SARA legislation there's already an inventory required, that's a part of that Act. Is that not the case?

Mr. SEIF. You've just discovered an interesting intersection between the two laws, although petroleum facilities are not part of the SARA regulatory scheme. But in fact, as you have seen in terms of public concerns, a great outcry over, say, municipal waste ash, (to name an example that you would know something about,) compared to petroleum, which is often excluded from hazardous waste schemes, is not as hazardous, and yet we have a kind of a double standard. I think that the public right to know should probably extend to the kind of facilities that we're examining this morning.

Mr. WELDON. So you're saying, perhaps the SARA legislation should be modified to some extent?

Mr. SEIF. Some have suggested that.

[Laughter.]

Mr. WELDON. Let me ask you this. As a result of this incident, has EPA Nationally notified other companies of this particular incident and the ramifications of what occurred there, and perhaps they should then be looking at their installations in a precautionary preventative manner? Have we done that, Nationally?

Mr. SEIF. Not officially. I think it's fair to say that—or maybe we have officially. I'm sorry. I think that Peter Jennings, Dan Rather, and Tom Brokaw notified them all several times over during the week after the spill.

Mr. WELDON. It might not be bad though to perhaps officially let the companies know that there's been an incident and that they should be on record of what the concerns were with this situation, and let those companies that have tanks like this be aware of the problems that have occurred as a result of it.

Mr. FIELDS. Congressman, just on that one point, I just want to indicate we have had several meetings with API, and CMA, and other folks who are involved, and obviously, a number of companies are quite involved in above ground oil storage tank issues. They have requested, and we have provided copies of our regulations that they've sent to their membership. They have established task forces looking at this issue, and their member companies are definitely relooking at their own operations in light of this incident.

So, I think you'll find that the industry, as Mr. Seif indicates, is very well aware and is already taking action in light of this situation.

Mr. WELDON. There was some discussion by several of you on the panel regarding the need for protection, financial protection. And I was just wondering whether or not there are any requirements that installations like this have to have certification of environmental impairment liability insurance, and if so, what are the extent of the coverages of that insurance, and I know there's been a problem within the insurance industry Nationally, about being able to buy this type of insurance. And whether or not that's a problem, or should that be a requirement for these kinds of installations?

Mr. SEIF. I think Mr. Block will be able to address that issue with respect to the insurance, for this incident and for this kind of spill within his industry. But you're certainly right about the insurance situation in general, and I don't know of anything in our regs that—

Mr. WELDON. Should there be a requirement for this type of financial guarantee or insurance coverage?

Mr. SEIF. I don't know the answer to that, because that—it depends on what luck we've had at collecting the money, and the fact is we haven't had to go after it that many times because parties do pay. One of the things that's interesting here is this is not stuff people want to get rid of, diesel fuel, gasoline, whatever it is. The incentives are all in the direction of conserving, protecting, and making sure that the product doesn't leave the site or leave the tank where it is. So the incentives are strong to—

Mr. WELDON. Well, my concern would not be with an Ashland Oil, or a Sun Oil, or a Chevron. It would be with perhaps a smaller operation, maybe a one-tank operation that might not have the fi-

nancial integrity that would be involved if that tank, in fact collapsed and caused major environmental damage to the area. My concern is not with the larger companies, I think they've adequately covered that and protect themselves and the neighboring areas. I'm concerned about a smaller installation, a one or a two tank facility, perhaps a job or some other smaller operation, and whether there's any protection there needed, and whether, I guess, what you're saying is, you really haven't formatted an opinion as to whether or not there should be a certification of financial responsibility before they're allowed to build a tank.

Mr. SEIF. I don't have an opinion on that.

Mr. WELDON. I think that's something we should look at, Mr. Chairman.

Mr. FIELDS. We did look at it briefly. During the task force that I mentioned, the opinion of our general counsel was that we don't have the current legislative authority under section 311 for that particular aspect. We did not make a final decision regarding whether it should be a requirement.

Mr. WELDON. My next question involves the jurisdiction—I won't say dispute, but the jurisdiction overlap which occurs with an incident like this. We had EPA, FEMA involved, the Coast Guard from the Federal standpoint, and I understand that the onsite lead person was an EPA person.

What would have happened if that would have been a flammable, instead of a combustible liquid, and it would have ignited? Who would have been the on-scene person then responsible, since it then becomes, instead of an environmental problem, a major fire and a major conflagration? Would EPA still have been the on-scene commander in charge?

Mr. SEIF. It depends on the presence of the material in a waterway. In the area with which you may be more familiar, we use Route 95 as the boundary between first response in the Philadelphia area. The Coast Guard on the river side, and EPA on the other side.

In this case, it was EPA territory, but our closest person was in Wheeling, West Virginia, about an hour, or maybe two hours away. Whereas the Coast Guard was right on the river. Our on-scene coordinator got there at dawn the next day, and took over.

Much has been made of disagreements here between people. In fact, when you consider how fast all of this occurred, and how long then it continued to be a coordinating problem, I think the coordination was first rate. There was no headline hunting on the part of people who were in political leadership positions. And there was no bickering in the trenches. I was there. I was there in both forums, if you will. And the contractors who were actually out there deploying booms and so on, knew each other, got along with our people, knew the Coast Guard people. The Ashland people who were there were anxious to have direction and took it. The people who were in charge of water supply issues, and that's principally the Commonwealth, and the PEMA people who moved the water buffaloes—which is not a four-legged animal that makes funny noises, it's actually a tank truck—all over the community. I think it worked just fine.

The microscope would reveal a few places where it didn't. I don't know that a fix is needed, certainly in a regulatory sense in that area.

Mr. WELDON. I have one last question.

That is, the SPCC regulations, as I understand it apply to water proximity locations. Do we need to extend that to apply to areas where we have these tanks and there is no water in the immediate vicinity, but yet still have a need to protect tank failure and control of the situations? Is that something we should be looking at?

Mr. FIELDS. At the current time, you know, based on the task force that we conducted over the last three months, we don't think that's an area where new regulation is needed. We think the primary area—most of these facilities, you will find, are located near areas where navigable waters could be threatened. We don't think that is an area where new regulations are needed.

Mr. WELDON. Well, I'm not necessarily talking about just from the standpoint of environmental concerns. In other words, you think if a tank farm is located in a heavily populated area with no water around, the fact that a tank would fail, that there's not a concern there in terms of——

Mr. FIELDS. Well, I guess the survey we did, based on the survey of the 675,000 plus facilities we came up with, 95 percent plus of those facilities that we identified in that survey were located in areas where a threat to navigable waters could occur.

Mr. WELDON. Okay.

Mr. FIELDS. So the vast majority of those facilities that you're talking about are going to be near an area where a release to navigable waters could potentially occur.

Mr. WELDON. How about the other ones?

Mr. FIELDS. The other five percent or so?

Mr. WELDON. Yes. And are we going to encourage, then, companies to move to non-navigable——

Mr. FIELDS. It is an issue worth looking into. We need to look into that, I guess. We just concluded that since so many were there, and no problems had been identified with these other facilities, we didn't see that as an area where new regulation needed to be explored. We can go back and look at, you know, that five percent and see whether or not there's a need for some additional controls or precautions.

Mr. SEIF. Remember I'm always fighting with other Federal agencies about a definition of navigable water, and any old puddle will do for me, in my definition.

I might also say tanks this big are almost reliant upon real navigable water for their efficiencies.

Mr. WELDON. I yield back the rest of my time.

Mr. FOGLIETTA. I thank you, Mr. Weldon.

Mrs. Bentley?

Mrs. BENTLEY. Thank you, Mr. Chairman.

First of all I want to say that I'm impressed with the apparent harmony with which all of the agencies worked in an effort to keep the problem to a minimum, and remark that if this had to happen, Mr. Chairman, we were fortunate that it happened with a company that was responsible, that pitched right in there with this type of caliber of Government officials, who all just came to the—respond-

ed immediately and really worked at it. And that's why it wasn't any more of a devastating problem than it was. So I commend all of you for your roles.

The question that I have, the dikes are six feet, and I understand that one of the reasons that they're six feet is to allow if a person should be trapped inside that they could get out. Would it be any better if the dikes were higher and you had ladders, or stairways so that this would, again, facilitate a person from getting out of an area like that?

Mr. FIELDS. I can start on that one. The Occupational Safety and Health Administration was a member of our review of this incident. And you're right, the six-foot requirement is there primarily for safety reasons, but there is a provision for a waiver from that six-foot requirement. And as appropriate, people can apply for, and get a waiver to that six-foot requirement, if the need is really there.

We are, obviously though, EPA, working with OSHA. As we look at revising our regulations for the future, we need to look at whether or not that current OSHA requirement needs to be revised, or whether new legislative authority needs to be gotten by OSHA to revise that requirement so as to not cause a problem for spill prevention, if there's a real need. So we are working with OSHA on that issue.

There's a current procedure where a waiver can be gotten to the six-foot requirement, but we are, as we develop a rulemaking process over the next several months, looking at whether or not there needs to be additional changes in that area.

Mr. SEIF. It seems to me the thing to focus on from the spill prevention point of view, is how much the total containment area will hold. You can have a two-foot dike, it simply has to be far enough away so that the area can be contained.

In this particular facility, it's an old facility, immediate post-war, I think, and there simply wasn't space to go very much farther out. So you came right up against the OSHA standard.

Mrs. BENTLEY. And I understand the surge was very heavy, and very fast.

Mr. SEIF. Far above six feet.

Mrs. BENTLEY. We were talking, Mr. Weldon was talking about standards, and how do we inspect them. Over the years, as I recall it, industries, various industries in this Country, have had their own private safety standards. Some of them operating under the American Institute of Underwriters, et cetera. I am always—you know, Government is great, but also the Government has it's limitations, too.

In this instance, what kind of standards are there for the petroleum industry? Are there any?

Mr. SEIF. I think Mr. Block or other representatives from that industry will know much more about it, but I would certainly agree with you that there are existing standards, not only for construction, but for testing. And there's some dispute about whether they were applied here before the incident, but that wherever possible those should be relied upon and/or incorporated in Government standards where our own independent review of them shows them

to be efficacious for the regulatory job that we're assigned, of course.

Mrs. BENTLEY. You set up standards and then if you don't have the inspectors, they could have the qualified people to do the inspecting? We have that in the shipping industry, and that's one of the reasons I was bringing it up. We have the Private National Cargo Bureau, and organizations—the Coast Guard sets standards, and the industry itself has responsibilities for meeting those, without having Government inspectors there all the time because the Government can only do so much, is what I was getting at.

Mr. Seif, incidently, I think now it comes under the Philadelphia——

Mr. SEIF. It does.

Mrs. BENTLEY. On page 3 of your testimony you referred to Ashland's unpreparedness to contain and counter the spill. Does this apply generally to above ground tank operators, or specifically in this incident?

Mr. SEIF. I was referring to specifically in this incident. This facility is built just a few hundred yards above the first of three dams between the site and the formation of the Ohio River. That circumstance, I think, would require extra care onsite, the presence onsite of extra equipment booms, for example, given that once water and oil go over the dam the mixing is such that booms beyond that are less efficient. That was in reference to my remarks about the need to c. tomize a given plan for the vulnerabilities that a site might have.

I don't think that was done here. There was also a pipeline from an adjacent property, Duquesne Light, which was an ordinary storm drain, through which much of the oil made it's way to the water. This was not a direct overland spill—simple acknowledgement of the existence of that and an engineering plan to prevent it from being a pathway might have saved a lot of oil in this case.

Mr. FIELDS. I'd like just to add what Mr. Seif said. The current regulations, as we were talking about loopholes earlier, we don't believe go quite far enough regarding the contingency planning aspect of these facilities, and our task force report, subject to approval by Dr. Porter, would recommend that each facility be required to have a facility-specific contingency plan, to make sure that when incidents like this do occur, that they've got a plan in place to assure themselves they can respond quickly to an incident like this in the future.

So we think that we, in the Federal Government, maybe need to go further in requiring facility-specific contingency plans for the future, to help prevent these kind of response problems in the future.

Mrs. BENTLEY. When you're talking about contingency plans, since you said a few minutes ago, Mr. Fields, that 95 percent of these tanks are along waterways. Would it be feasible to construct dikes along river beds and install automatic sewer drain closures to prevent the spill from flowing into the rivers?

Mr. FIELDS. It would be feasible for certain facilities. It obviously would be a facility-specific determination, but you can put in place, you know, sluice gates and a variety of other types of techniques to ameliorate and prevent releases from going into river bodies. There

are various techniques that can be utilized at facilities. And that is something that we're looking at for the future also.

Mrs. BENTLEY. Okay.

Thank you, Mr. Chairman. I do yield back the balance of my time.

Mr. FOGLIETTA. I'm glad that you and Mr. Weldon have yielded back the balance of your time.

Well, we thank you gentlemen. I have no further questions.

Mr. SEIF. Thank you, Mr. Chairman.

Mr. FOGLIETTA. At this time, since we're running a little later than we expected to, I think we're going to call a luncheon recess until 1:30. You'll all be back at 1:30, please.

[Whereupon, at 1:30 p.m., the subcommittee recessed, to reconvene at 1:30 p.m., the same day.]

AFTERNOON SESSION—1:38 P.M.

Mr. FOGLIETTA. The Subcommittee on Oversight and Investigations of the Full Committee of the Merchant Marine and Fisheries will come to order.

Since the third panel consists of three members, and the fourth panel consists of two members, and we have five seats at the witness table, would anyone object to combining those two panels?

[No response.]

Mr. FOGLIETTA. No objection, we'll proceed in that manner.

Mr. Phil Block, Mr. W.J. Carter, Mr. David Zebley, Dr. Edgar Berkey, and Mr. E. Crone Knoy.

If each of you from left to right, starting with Mr. Block would present a short statement, we then will proceed with questioning after that. Your prepared statements will be inserted immediately following your oral presentations.

You may proceed, Mr. Block.

STATEMENT OF PHIL BLOCK, VICE PRESIDENT, ASHLAND OIL CO.

Mr. BLOCK. Thank you, Chairman Foglietta. Members of the Committee, I'm pleased to have this opportunity to represent Ashland Oil before your committee today. My statement will briefly describe the events subsequent to the oil spill on January 2nd at Ashland's Floreffe, Pennsylvania terminal near Pittsburgh.

As you've heard, at about 5:00 p.m. that day a four million gallon storage tank collapsed suddenly, spilling nearly 3.9 million gallons of diesel fuel in a tidal wave-like surge. About 715,000 gallons of diesel fuel subsequently escaped in the Monongahela River, which joins the Allegheny to form the Ohio about 25 miles from our terminal. Despite the problems that we encountered in the cleanup activities, which some of the previous witnesses have already mentioned to you, our cleanup and containment efforts resulted in the recovery of about 30 percent, or about 204,000 gallons, of the oil which actually reached the river. And we've been told that the EPA considers a 20 percent recovery rate to be very good.

Our response to the situation was extensive, and we believe no effort was spared, nor was any expense. Along with cleanup, the protection, provision, and restoration of water supplies was our

first priority. We did everything we could think of, and everything we were asked to do. Three days after the spill, Ashland Chairman and Chief Executive Officer, John R. Hall, and President, Charles J. Luellen, went to Pittsburgh to publicly apologize. Mr. Hall also announced what we knew about the tank at that point, and acknowledged that employees involved in construction had departed from optimal procedures. Four employees from the engineering department, and the Trucks and Terminals Operating Group subsequently were reassigned.

Mr. Hall also announced that Ashland had retained Battelle Memorial Institute to do an independent investigation into the cause of the collapse and pledged to make the results public. Today Mr. Hall returned to Pittsburgh to announce Battelle's findings. And I believe we have provided the committee, earlier this morning, with a copy of Battelle findings.

Battelle has determined that the tank failure was due to a brittle steel fracture emanating from a flaw in the bottom course of the steel plate in the tank. According to Battelle's study the flaw, which was located in the base metal, just below a horizontal weld, had been there since the steel was manufactured, prior to its original installation at Ashland's terminal near Cleveland. The Battelle study reveals that the steel had not degraded as it aged, but that it was low toughness steel compared to today's standards, and was unable to arrest the crack resulting in the total failure of the tank. X-rays of the welds performed during the reerection of the tank indicated that certain old welds did not meet current standards. Battelle's tests indicate, however, that the old welds were stronger than the steel plate.

As Ashland has previously announced, a full hydrostatic test, the preferred method under American Petroleum Institute's standards, specifically API 650, was not performed on this tank prior to its being put in service. The Battelle study said, however, that had this test been conducted, any of three outcomes were possible. The tank may have withstood the test, it may have developed a slow leak indicating a problem, or it may have failed catastrophically. Further, Battelle indicates it's likely that x-ray examination of the weld above the flaw would have revealed the flaw. They further concluded that there were no problems with the foundation of the tank. Ashland has stated that all future tank construction will be in full compliance with the material, welding and testing specifications of API 650.

As a result of the collapse of the Floreffe tank, a review was undertaken of Ashland's tank facilities to determine their physical condition. While the review is not yet completed, 146 facilities with more than 1,000 tanks have been inspected to date. Where appropriate, remedial action as indicated by the review have been undertaken, or scheduled to be undertaken in the near future. Organizational and procedural changes to strengthen environmental compliance efforts are under review, and several changes have already been implemented. In regard to the terminal itself, Ashland is continuing to cooperate with all appropriate agencies on all other issues related to the diesel fuel spill.

As part of our site remediation investigation, we drilled wells to test the ground water, and as you heard this morning, preliminary

analyses of water samples from these wells indicate the presence of contaminants, including benzene and some chlorinated hydrocarbons in varying levels at certain points within the terminal. We are not aware of any drinking water wells downstream of the terminal which have been endangered by these compounds. Nor do we have any reason to believe that any of the compounds have migrated from our property.

We have agreed to remove the indicated compounds from the ground water to levels acceptable to the U.S. EPA and the Pennsylvania Department of Environmental Resources. Plans for soil and ground water remediation and treatment have been submitted to these agencies for their review.

We continue to assess the environmental impact of the spill. Funded by a $250,000 grant from Ashland, the Center for Hazardous Materials Research at the University of Pittsburgh is independently examining where the oil went and what effects it had on the river's ecosystem, as Dr. Berkey, I believe, will testify in a moment. We've also retained ERT, a leading environmental consultant, and Battelle, to conduct further studies on the impacts of the spill. Natural resources being examined include water, bottom sediments and bank soils, aquatic life, terrestrial wildlife and vegetation, sensitive ecological areas, and recreational use areas.

We currently believe that further study may not be necessary along the entire 740 mile stretch of the river we have previously looked at. We are working with State and Federal Natural Resource trustee agencies to determine the extent of natural resource damage, and to determine what remedial steps may be needed.

To date we have received over 4,000 claims asking for about $18 million from businesses, individuals, and Federal, State, and local government agencies, and have made payments in excess of $7 million to over 50 percent of those claimants. Of the more than 4,000 claims filed, about 2,500 belong to individuals, and more than 70 percent of the claims made by individuals have been paid.

Despite our spill, and the other crude oil and product spills which have occurred over the past five months, we continue to believe that the industry's self-enforcing actions combined with existing regulations are sufficient to protect the public and the environment. In that context, we continue to urge for clarification of existing regulations and standards to incorporate the lessons that have been learned from this event.

In summary, we deeply regret that this incident ever occurred. We've tried to be as responsive as we can to all of the demands being made of us. And we will continue to cooperate with all appropriate agencies on remaining matters.

[The prepared statement of Mr. Block, and the Battelle Findings can be found at end of hearing.]

Mr. FOGLIETTA. We will ask the questions after we've heard from all five, but just one point of clarification. I missed the point that you made, namely that if certain things had been done, that you would have known of this fissure, which was developing. Would you repeat what those conditions were?

Mr. BLOCK. Basically, Congressman, Battelle has stated that if the weld above the flaw had been x-rayed, the x-ray would have likely indicated the presence of the flaw.

Mr. FOGLIETTA. Would it be practicable to have that kind of a regulation where these could be—maybe not x-rayed, but more thoroughly examined prior to use?

Mr. BLOCK. API 650 includes procedures for radiographic or x-ray examination of welds on tanks such as this.

Mr. FOGLIETTA. Are they required, or are they suggested?

Mr. BLOCK. API—Ashland's policy is to comply with API 650. As to whether or not API 650 is required by local, Federal, or State regulation, I'm not really sure.

Mr. FOGLIETTA. I thank you, Mr. Block.

Mr. Carter?

STATEMENT OF W.J. CARTER, ENGINEERING AND TECHNOLOGY, CHEVRON

Mr. CARTER. Thank you, Mr. Chairman.

Mr. Chairman and members of the committee, my name is Will Carter, with the Chevron Corporation. And I'm here today representing the American Petroleum Institute. I am vice chairman of API's Subcommittee on Piping, Pressure Vessels and Tanks. This subcommittee is responsible for the development of API's non-production tank standards, which includes Standard 650, "welded Steel Tanks for Oil Storage", which you have requested us to address.

The American Petroleum Institute represents organizations and individuals involved in all aspects of the oil and natural gas industry, including exploration, production, transportation, refining, and marketing. API administers an extensive program of technical standards that cover all phases of the industry's operations, including storage of crude oil and refined products. The hundreds of API standards covered by this program are voluntary.

API standards are used worldwide by industry and governments. These standards offer operating efficiency and compatibility at industry facilities. They meld together the expertise of those who use industry equipment and those who make that equipment. The standards are continually reviewed and updated to insure they incorporate state-of-the-art information, data and procedures.

API has six petroleum storage tank specifications. Four cover: bolted, field welded, shop welded, and fiberglass reinforced tanks used in production operations. The other two specifications cover tanks used for petroleum stored at a gas pressure of 15 psig and less; and tanks used for petroleum stored with an internal pressure approximating atmospheric pressure. The latter, API Standard 650, Welded Steel Tanks for Oil Storage, is recognized as an American National Standard and used throughout the world.

API Standard 650 is a purchase specification that applies to vertical, cylindrical above ground, closed, and open top welded steel tanks, which are used to store petroleum and other liquids used by the industry. The standard covers nonrefrigerated service tanks of different sizes with an internal pressure set at or near atmospheric levels. It does not establish a fixed series of allowable tank sizes, but is intended to assist purchasers and manufacturers in ordering, fabricating, and erecting tanks that meet the purchasers needs.

The Seventh Edition of API 650 outlines various standards for materials, design fabrication, erection, testing, and inspection of tanks:

Regarding materials, carbon steel plates used for the tank body must meet specific standards of the American Society for Testing and Materials, the Canadian Standards Association, or the International Organization for Standardization. Open-hearth, electric-furnace, or basic oxygen plate manufacturing processes must be used. Alloy content, heat treatment, impact testing, and toughness requirements are specified. Pipes, pipe toughness couplings, forgings, flanges, nuts, bolts, and welding electrodes also must meet ASTM, American National Standards Institute, and American Welding Society standards, as well as additional requirements imposed by API.

Design: Minimum acceptable design requirements are provided for building tanks. Joint, bottomplate, shell, shell openings, shell manholes, nozzles and flanges, cleanout fittings, connections, attachments and accessories, stiffening rings, and roof design are covered. Special considerations are noted for foundations, corrosion allowance, service conditions and weld hardness. Written instructions are amplified by detailed charts and drawings.

Fabrication and Erection: The workmanship, finish, marking, and inspection of materials to be used in building the tank are covered. Welding techniques and methods of inspecting joints are explained in detail. Weld repairs, dimensional tolerances, measurements, and alignment are covered.

Testing and Inspection: The standard specifies that the purchaser's inspector have access to the construction site. Welder qualifications are provided. Radiographic inspections of butt welds is required and other nondestructive examination methods are addressed. A procedure for testing the tank bottom is provided, and the standard specifies a hydrostatic test of the completed tank and an air pressure or vacuum test of the tank roof.

Identification: The standard provides for identification of a tank built in conformance with the standard using a nameplate and indicates the information required on that nameplate.

Supplementary appendixes are provided covering an optional design method for tanks, recommendations for the construction of tank foundations and under bottom connections, minimum requirements for external or internal floating roofs, design considerations for tanks that may be subjected to earthquakes, design considerations for tanks with small internal pressures, shop-assembled tanks, additional requirements for tanks to be operated at metal temperature exceeded 200 degrees fahrenheit, and use of unidentified materials for tank construction.

The first edition of API 650 was published in 1961, replacing an earlier API standard that covered welded oil storage tanks that goes back to 1936. The seventh edition was published in 1984. It is a living document, and a new edition is currently in the publication cycle and is expected to be available to the public by the end of the summer. API 650 is based on the best accumulated knowledge and experience of purchasers and manufacturers of welded steel storage tanks of various sizes and capacities. Thousands of copies are sold annually. In addition, this standard has been refer-

enced in several voluntary codes such as the National Fire Protection Association Code 30 titled, "Flammable and Combustible Liquids Code," in several Federal regulations and in a host of State and local requirements.

As I stated previously, the API Committee on Refinery Equipment, through its Subcommittee on Piping, Pressure Vessels and Tanks, is responsible for API 650. The standard was prepared under the procedures approved by the American Petroleum Institute which call for open deliberations, regular review and interpretation, and appeal procedures. Draft standards are prepared during meetings that are announced in advance in trade and standards publications and are open to the general public. Representatives from equipment manufacturers, from contractor companies and from oil companies that use the standards participate in the development of the draft standards. Draft standards then are voted on by the subcommittees of users, manufacturers and contractors and by the parent committee. Standards are approved under a consensus process with an intensive effort to resolve all objections and criticism. API standardization committees develop standards on the basis of substantial agreement.

Revisions to standards are developed based on changes in technology, consideration of technical inquiries that have been received on the prior edition of the standard, and information obtained from equipment or material failures. Before publication, all API standards are reviewed to assure that there are no problems with antitrust or conflicts of interest.

And I might add that API 650 is an American National Standard, which means that it has to be approved by the American National Standards Institute, and go through their review process. In their review process they submit the standard to other trade associations, agencies and individuals.

Thank you.

Mr. FOGLIETTA. I thank you, Mr. Carter.

And we are going to take a 10-minute break for the purpose of my casting a vote.

I would like to remind the remaining witnesses that they can paraphrase their statements, and issue the full statement for the record. You might want to take the next 10 minutes in preparing that paraphrasing. Thank you.

[Recess.]

Mr. FOGLIETTA. The committee will come to order. I apologize for taking a half hour rather than 10 minutes. That's because the vote was a quorum call, and then we had to wait around for the next vote. Please accept my apologies.

Mr. David Zebley, Vice President, Sunoco Marketing, Sun Refining and Marketing Company.

STATEMENT OF DAVID ZEBLEY, VICE PRESIDENT, SUNOCO MARKETING, SUN REFINING AND MARKETING COMPANY

Mr. ZEBLEY. Thank you, Mr. Chairman.

I appreciate the opportunity to appear before this committee to present Sun's views on the prudent management of above ground tanks.

Sun owns and operates 39 terminals in its marketing area. And sited within these terminals are 266 above ground storage tanks, with a capacity of 5.1 million barrels. Sun also owns and operates three mainland refineries located in Marcus Hook, Pennsylvania, Toledo, Ohio, and Tulsa, Oklahoma, in which there are approximately 1300 above ground storage tanks with approximately 23.4 million barrels of capacity. The materials stored are typically crude oil, lube oils, chemicals and fuels. This background will provide some dimension of the size of Sun's tank population and some appreciation for the significant challenge managing this population poses. I believe Sun's track record speaks well of the management program we have developed over the years.

It is also the result of adhering to currently applied practices and codes regulating above ground storage tanks developed by organizations such as the American Petroleum Institute, and the National Fire Protection Association. Our objective is to establish and maintain a safe environment for both employees and the communities surrounding our facilities.

I'd like to focus my remarks on the construction area, and the inspection area.

In the construction area, Sun is a 650 tank builder. It is the accepted industry standard that describes design specifications, site selection, construction, standards, and testing of above ground storage tanks. Although 650 has been characterized as a minimum standard, it is a conservative, rigorous, and widely applied standard.

For a newly constructed tank to be labeled a 650 tank, the construction process must strictly comply with the standard, including the final testing procedure prior to the tank going into service. Sun, as a matter of policy, hydrostatically tests all new tanks before they are placed into service. In our opinion, that is the one certain method that fully tests the strength integrity of a tank.

Mr. FOGLIETTA. May I interrupt, Mr. Zebley?

Mr. ZEBLEY. Sure.

Mr. FOGLIETTA. Would you explain hydrostatically?

Mr. ZEBLEY. We fill the tank with water.

Mr. FOGLIETTA. Thank you.

Mr. ZEBLEY. Incorporated into the ongoing function process, or construction process, are checks and inspections on the work completed and work in progress by Sun engineers.

In the inspection area, the API guide for inspection of refinery equipment, Chapter XIII, Atmospheric and Low Pressure Storage Tanks, is a general guide to inspecting above ground storage tanks. Sun employs many of the techniques described in Chapter XIII, which are integrated into our own inspection regimen as part of Sun's tank management program.

To more fully explain the inspection regimen, Sun performs inspections on a routine basis to ensure the safe operations of its tanks, both in the refineries and in the terminals. In the terminals, visual inspections are performed daily because of the small number of tanks involved. More detailed monthly and annual inspections are conducted by the terminal manager and his staff, and by a field engineer, respectively, who are trained to recognize problem areas and identify systems of potential defects or deficiencies. Inspections

include, as well, the dikes which comply with the NFPA #30 standard, surrounding the tanks.

The larger number of refinery tanks requires a different approach. Visual inspections for which the tank operators are responsible, are done less frequently than daily. Additionally, tank crews within the refinery are responsible for executing preventative maintenance programs. Beyond these more immediate inspection programs, a detailed in-service tank inspection is conducted every five years, and an out-of-service inspection, which permits us to physically enter the tank, is typically performed on a ten year cycle.

Visual inspections are a significant component of our inspection program. It is a method that immediately enables the inspector to identify small leaks, which is weeping, and quickly initiate corrective action.

Each of our facilities has an up-to-date spill prevention control and countermeasure plan, and in addition each facility has its own Sun Oil Spill Manual. This Oil Spill Response Contingency Plan is designed to prepare an organization to make a rapid coordinated response to a spill accident.

Sun is confident that the procedures that it has in place reduce the risk of catastrophic incident and also of minor tank failures. Guarantees against these types of incidents occurring cannot be legislated or regulated, but their possibility can be minimized by prudent design and operating practices. Current regulations, codes, and standards diligently practiced are adequate safeguards which provide for the safety of the communities in which these tanks are located.

Sun could support a registration program of above ground storage tanks in order to provide a tank inventory to EPA and State agencies for management purposes.

Thank you.

[The prepared statement of Mr. Zebley can be found at end of hearing.]

Mr. FOGLIETTA. Thank you, Mr. Zebley.

Dr. Berkey?

STATEMENT OF EDGAR BERKEY, PH.D., PRESIDENT, CENTER FOR HAZARDOUS MATERIALS RESEARCH, UNIVERSITY OF PITTSBURGH

Mr. BERKEY. Thank you, Mr. Chairman. I'm Dr. Edgar Berkey. I'm the President of the Center for Hazardous Materials Research at the University of Pittsburgh.

Since early January, our organization has been working to understand the short-term and long-term environmental effects resulting from the spill that we're discussing today. This work is being funded by a no-strings attached grant received by the University from Ashland. I want to emphasize that we take very seriously our commitment to conduct our work in an open, independent manner. To the extent that we can, we have been cooperating with all the public and private organizations involved.

There are really two reasons for doing the kind of work that we're doing. One is part of a natural resource damage assessment,

and two, because of the public's interest in understanding the environmental and public health effects from the spill. We're convinced that it's very important for the public to have sound, credible technical information available on issues like the spill so they can understand what happened.

In an era filled with legal, liability, and financial ramifications, this is not always easy to do. However, we're very convinced as a group that a better understanding of events like this must be obtained, or it will never be possible for our society to address the kinds of hazardous materials problems that we have, because attitudes, opinions, regulations, laws will develop and decisions will be made with inaccurate and possibly misleading information.

At the heart of our approach is a multidisciplinary attack on the problem. In the next few days we will be publicly releasing a more comprehensive progress report on the full scope of our activities, which support some of the things that I'll be mentioning today.

I'll only hit the highlights from the testimony provided to you. We have attached figures to the testimony that will assist you in understanding some of the comments that I'll be making.

And let me get to some of the major conclusions that we have reached so far, after having worked on this incident for a number of months. The amount of oil that entered the river system—we're quite convinced that about 705,000 gallons of diesel fuel entered the Monongahela. Of this, about 205,000 gallons were recovered, leaving 500,000 gallons that were lost to the river system. And that's a fairly confident figure.

The rate at which the oil entered the river—54 percent of the oil that entered the river entered over the first two hours, based on our investigations and analyses. Over the next, roughly, 10 hours, the remaining 325,000 gallons entered the river. So it was not an event that was instantaneous. It was an event that was drawn out over time. We must remember, however, that it occurred overnight under river conditions that were very rapid, high flow conditions, freezing temperatures, and not everything was clear as to what was occurring at that time.

The oil recovered during cleanup operations—about two-thirds of the 205,000 gallons recovered, were recovered in the first five days. In the next 10 days, about another 20 percent were recovered. Meaning that in the first 20 days, roughly about 90 percent of the oil was recovered. That's a fairly good record for diesel oil, when you consider that it does mix fairly well with water, and as we've already heard today, the circumstance of the dams adds to that problem.

In the figure attached to the testimony, we point out that the pathway of the diesel to the river was a sewer line that really had nothing to do with the dike or containment system involved with this facility. It's simply an artifact of that site, and had that situation not existed, had that sewer line not been there, there would have still been the collapse, and the discharge of the oil, but none of the oil would have entered the river system.

Based on our analyses we can be fairly confident about the region of most significant environmental impact. And we believe that is not the full length of the Ohio River as some have indicated, but rather it's between the spill site and Wheeling, West Vir-

ginia. It's a 112 mile stretch of river and we think the most significant impacts can be found in that area. We know that water quality measurements made at Wheeling when the spill was passing, showed that at that time only 125,000 gallons of oil were left in the water, meaning that most of the oil had already been deposited or volatilized from the river water. Or in other words, it could have been known shortly after the spill passed Wheeling, that the event was not of the same magnitude or proportions that people had indicated at first report.

What's the fate of the oil in the river? Of the oil, we believe that most of it has deposited in the sediments from the spill site to the Willow Island Lock and Dam, which is a stretch of river of about 187 miles. There is a small amount of oil that passed that site, but the most significant impacts are restricted to that region. That means that the endangered species, such as the pink pearly mussel, that are located 300 miles downstream, were spared the bulk of the problem.

Frankly as we have done our work, we have been surprised with how little good usable data was obtained during the spill and with the large amount of anecdotal information that is available to develop the natural resource damage assessment. And it's something, I think, that Congress should consider, because it is an assessment that does need to be done in matters such as this, and the best way to do it is with good data, and there is a lack of this in this case.

When we look at the short-term impacts on fish, we understand that the most significant problem occurred in the Willow Island pool, where the largest number of fish kills were reported. We understand the reasons for this, based upon toxicity data, concentrations, exposure times, river flows, and what-have-you. Locations in the river before that site, where fish were exposed to higher concentrations, but for shorter periods of times, did not result in significant fish kills. The numbers that have been cited today on the fish kills are a very tiny fraction of the fish that live in the river. A typical study for a quarter mile stretch will yield hundreds of thousands of fish.

The short-term and long-term impacts on waterfowl as we know them right now, were restricted to stretches of the river where there was substantial amounts of floating oil, and those are largely the Monongahela River and the upper reaches of the Ohio, lying entirely in the State of Pennsylvania. An accurate assessment of the wildlife damage has not been possible, because of the anecdotal nature of the information, but the species affected were more domesticated and less wild varieties. The more wild varieties were wintering in other parts of the U.S. during that time.

Nevertheless, there are potential long-term impacts to wildlife due to oil coating of new eggs, or from the presence of the oil in the sediments as it's released, and this is being studied.

The most probable source of long-term toxic effects to wildlife and to the humans, is naphthalene and naphthalene-related compounds in the diesel fuel. They pose a potential source, but vertebrates, fish, birds, mammals, humans metabolize these compounds and so there is no potential for long-term accumulation from them. The most significant concern is the chronic low level exposure that will occur as the oil is released from the sediments.

We have received information from ORSANCO recently, on the evaluation of fish flesh analyses. Two types of fish were caught along the Monongahela and the Ohio Rivers in March and April, down to 365 miles downstream. They showed levels of naphthalene between .6 and about 9.4 parts per million. However, no control samples were taken from above the site, and we feel that the data is not yet sufficient to establish any linkage with the January 2nd spill. More data are needed, however, in our opinion the concentration of these compounds is not high enough to pose any significant health risks to the people who might eat them.

In conclusion, we will keep the public and certainly the Congress, and agencies informed on the progress that we make on the topics that we've mentioned today, as well as several other activities that we have underway. These activities include a survey of the public's perception of the environmental risks from the spill, which will be conducted in three communities, Robinson Township, Wheeling, and Steubenville, Ohio, that experienced different levels of water service disruption. Secondly, we will complete a worldwide compilation of case histories of major oil spills, including their causes, frequencies, and environmental impacts, as well as emergency preparedness and response actions.

Data to date indicates that of 63 oil spills in excess of 20,000 gallons over the last roughly nine to ten years, across the world, that only seven of these, or about 10 percent, were associated with the activity of storage— that's with the activity of storage. Now if you look at the cause of these 63 failures, you find that tank leak, or rupture, again, only accounts for about that same percentage of these spills. Far more important is pipeline leakage, and pipeline rupture.

So, in our view, I think Congress should consider the frequency of events such as this in developing appropriate legislation. I would like to stress that our work still has a long way to go before we have a complete picture of the impacts, and their implication on the environmental area. However, we're already seeing the value of having an independent organization like ourselves conduct a multidisciplinary investigation into an event like this without a legislative, legal, or regulatory agenda, but really with the objective of understanding and explaining the effects that occurred. However, we are limited by the amount of good quality data available, and wish more had been done to take appropriate samples before, during and after the spill passed key locations. To our knowledge there was no strategy developed and implemented to take the kinds of samples necessary to allow a speedy understanding of short-term effects, and to focus activities like the natural resource damage assessment.

Thank you very much, Mr. Chairman.

[The prepared statement of Mr. Berkey can be found at end of hearing.]

Mr. FOGLIETTA. I thank you, doctor.

Our last witness will be Mr. Knoy.

STATEMENT OF E. CRONE KNOY, P.E., TANK CONSULTANT

Mr. KNOY. Mr. Chairman, committee members, and ladies and gentlemen, it is indeed an honor and a privilege to have been asked to deliver testimony today. As I stated to Kurt Oxley, my primary expertise is in the water storage tank industry. I have 19 years experience in the design and construction of welded steel tanks and an additional nine years experience in the furnishing of inspection and consulting services concerning tanks. A portion of my work has been devoted to API standards. The standards for water and petroleum tanks are quite comparable.

I wish to address the conservative nature of these standards. Both of these standards are based on the same basic sound engineering principles and construction practices. Frequently the question comes up, how do these standards compare to other standards? For instance, the standards for the buildings that we're in. The tank standards are very conservative. Both API and AWWA, that's the American Petroleum Institute and the American Water Works Association standards, have among the highest factors of safety utilized in construction practice today. These low stress levels are especially significant in view of the predictability of the loads applied to a tank. For example, envision that a tank of certain fixed dimensions can only hold a fixed maximum volume and weight of liquid, as compared to—an example I'll use here, is the famous Kansas City Hyatt Regency balcony walkway collapse.

I use this as reference, because I think it's one of the most recent examples in the engineering world which received such nationwide publicity and impact. Unfortunately the Hyatt incident was approached with a heads must roll attitude—two P.E.'s lost their livelihood because they did not dot their I's and cross their T's, very minor errors. But you have to look at that type of loading, and the standards which allow higher stresses. You look at a balcony that can support maybe hundreds, in this case too many hundreds of people of various size, shapes and weights. They were dancing, which was a load, which is certainly not addressed in most elementary, and even advanced structural mechanics courses. The multiplicity of connections on something like that balcony is a completely different type of thing accompared to tanks. What I want you to know is that most construction standards that actually directly affect human life are based on higher risk factors than are the tank standards. And look at the difficulty of making the connections, the bolted connections versus two plates. You weld them together, it's simple.

So I would like to say, summarizing the remarks that I have, state that the standards for the design and construction of steel storage tanks—water, oil and petro-chemicals—are well conceived, proven, and are quite proper in their application.

I also discuss in my written testimony, the American Petroleum Institute Standards versus the American Water Works Association Standards. For sake of brevity, I will delete that portion of my statement, but sometimes lay people have questions concerning the slight differences in these standards, and I have tried to address these in my written testimony.

In my 28 years of experience, I've had occasion to investigate, I guess you'd call it many, I'd call it less than a dozen structural failures, because there aren't that many in tanks. But invariably, all the failures that either myself personally, or my professional engineering firm have been involved with, in all cases, there was no one thing that precipitated the failure. It took a combination of at least two or more things. Combinations of such things, such as inadequacy in design, inadequacies in assembly or welding, inadequate materials, unanticipated operating conditions, unanticipated loadings, corrosion or other deterioration, or damage, or foundation or subsurface failure.

For example, moderately overstressed designs, I've found, have failed only when accompanied by poor welding, corrosion, or some other of these listed causes. So, in my thinking, this pattern of needing more than one cause, or more than one deficiency to precipitate a failure, is excellent historical evidence of the adequacy of the present standards.

In summary, it is my belief that the present standards for design and construction of steel storage tanks are sufficiently conservative. Owners, engineers and contractors have been reminded by this incident (Monongahela River oil spill) that the requirements in the standards are minimum requirements, and that they are meant to be met.

In my testimony I also discuss some of the aspects of the marketplace—competitive aspects of the marketplace, the fact of how the U.S. system goes for the low dollar. Sometimes contractors are put in positions of providing lower than the standards quality of acceptance because some owners may, in their zeal for low price, agree to less than quality construction. I don't think that's the case of the fine companies here, but it does occur.

Most of the quality problems I find in my consulting services are prevalent in the tank repair and reerection business, rather than in the new tank business. Most of the steel plate fabricators who furnish tanks are members of what's called the Steel Plate Fabricators Association. And through this interchange of information, they are up on the latest techniques, and know what it takes to build a good tank. They also sit on the standards committees. The standards committees for tank standards are made up of manufacturers, owners, and generally some general interest interests, such as consultants such as myself.

In addition to the volunteer standards work that the members of industry do, through the industry association of the American Iron and Steel Institute, there is a multitude of information published and available to the industry, as far as fabricators and owners, on how to specify and purchase good tanks. In addition the American Iron and Steel Institute and Steel Plate Fabricators Association sponsor seminars throughout the country concerning the design of tanks. So there is in place a good standards, and a good education system.

Our Honorable Senator and Congressman, this morning, one of them said that he felt the legislative system should raise a flag. Ladies and gentlemen, the flag has been raised. The American Free Enterprise System has seen this flag. So, let this not be a "Three Mile Island", which brought down doom to the nuclear

power industry. But let it be what it is, a well publicized warning to purchasers, designers and constructors of tanks, that standards are to be followed, not circumvented.

Thank you very much.

[The prepared statement of Mr. Knoy can be found at end of hearing.]

Mr. FOGLIETTA. I thank you, Mr. Knoy.

I'll start my questioning with Mr. Block. The testimony that we heard from Mr. Zebley was that his company performs the hydrostatic testing of all tanks before they are put into use. Was that test performed on this particular tank in question, and is it a standard procedure for your company to perform those tests?

Mr. BLOCK. The full hydrostatic test was not performed on this particular tank. It is a standard procedure. I don't know why it was not performed in this particular instance. I can assure the Congressman, it is certainly a standard procedure for any new tanks that Ashland will undertake to construct in the future.

Mr. FOGLIETTA. How about, you say new tanks, what about tanks which are being reconstructed?

Mr. BLOCK. It would also apply in that case. Ashland has said, and our Chairman has committed and reaffirmed that we will follow API 650, which includes the full hydrostatic test standard in all its future tank construction, whether that's a reerected tank or a brand new tank.

Mr. FOGLIETTA. That test would have indicated that there was a possibility of an explosion, or a fissure developing?

Mr. BLOCK. No, sir, not necessarily. Battelle has indicated that the tank may well have withstood the test, or a small leak might have developed, in which case remedial action could have been taken, or it may have failed catastrophically. And they cannot say with certainty which it would do.

Mr. FOGLIETTA. Does anyone on the panel disagree with that answer?

[No response.]

Mr. FOGLIETTA. Thank you.

Mr. KNOY. I agree. It would not have necessarily proven it, but it could possibly have.

Mr. FOGLIETTA. How many tanks do you dismantle and move in an average year?

Mr. BLOCK. I don't know how many we move or dismantle in an average year. I'm only aware of four tanks, personally, that Ashland has moved and reerected. There may have been more over the history of the company, I'm just not familiar with it.

Mr. FOGLIETTA. What period of time has that been?

Mr. BLOCK. I think the four have been done within the last four or five years, the last three years. I'm really not sure.

Mr. FOGLIETTA. In your SPCC Plan submitted to EPA after the accident, Ashland stated that it was not practicable to install the total control system which the regulations call for. Explain why your plan did not adequately address these present regulations, and why can't they meet those standards?

Mr. BLOCK. Well, I think as this incident indicated, it's probably impractical, if not impossible, to prevent a release of this nature, as occurred when this tank ruptured.

As to why we didn't comply with the regulations, we feel that we did comply with the regulations in that we did have adequate containment as was required by the regulations to contain the capacity of the largest tank——

Mr. FOGLIETTA. My question is that the regulations call for certain control systems. In your plan, which was submitted, the Ashland Company said that they cannot conform to those standards. Do you know——

Mr. BLOCK. I can't respond, Congressman, I don't really know why.

Mr. FOGLIETTA. Thank you. Thank you, Mr. Block.

The next few questions I can address to either Mr. Carter, or Mr. Zebley, since you are both represent large oil companies here.

Many people in the industry feel that present regulations are adequate to prevent major spills. Do you share that view, and if so, how did this accident occur if the regulations today are adequate?

Mr. ZEBLEY. I feel the regulations themselves are adequate, and I think you've heard testimony here today that, had the regulations been fully complied with, it might have averted this incident.

From that standard, as far as from the 650 standard, if the tanks are built to those standards, inspected, and carried out, we feel that incidents, catastrophic incidents of this type would have a very low percentage of happening. I think the history of the industry, and you've just heard some numbers here, has been very, very good in this area.

But to say that it would never, never, never happen, I can't say that. But I don't think you can develop legislation that would prevent that from happening also.

Mr. FOGLIETTA. So what you're saying is in the overwhelming number of cases, the present day regulations would be adequate, except in a rare instance, in that this was a rare instance, is that correct?

Mr. ZEBLEY. Yes, that's correct.

Mr. FOGLIETTA. At the present time, EPA's regulations merely recommend that certain practices be followed. There are no penalties by law if they are not followed. Would either of you have objections to codifying these self-imposed regulations so that they would carry penalties?

Mr. ZEBLEY. Would we object to that?

Mr. FOGLIETTA. And if you did, why?

Mr. ZEBLEY. I don't believe we would object to that. We're complying with the regulations as they now exist. We would recommend, or we could live with, as far as the registration of all tanks. I think the only area that anyone has a real problem with, and even the folks here this morning that were proposing the legislation, can see a real problem once you get into the area of who does the physical inspection of the tanks, and how often, and when, and the cost associated with that.

Mr. FOGLIETTA. Do you agree with that answer, Mr. Carter, that you have no objection?

Mr. CARTER. First I'd like to remind the Congressman, that I'm speaking for American Petroleum Institute.

Mr. FOGLIETTA. Well, any companies?

Mr. CARTER. Actually, Chevron would not have any objections to the regulations requiring, and having a penalty associated with them. We do see a problem, though, also with inspection.

To our knowledge, there is not sufficient expertise in the industry to inspect tanks at some of the intervals that have been suggested.

Mr. FOGLIETTA. However, the question was whether or not you would object to codifying these regulations so that they would be enforceable by penalties if they were not abided by?

Mr. CARTER. No, we would not.

Mr. FOGLIETTA. I thank you, sir.

Would either one of you comment on the practice of dismantling, moving, and reconstructing these tanks? How prevalent is this? How often does it occur, and what specific standards are in place at the present time in the regulations to prevent this kind of a catastrophe from reoccurring, after the dismantling and reconstruction of a tank?

Mr. CARTER. Actually, I'd say within my company, it probably happens about once every two years. There are no specifications or standards that cover reerection, or dismantling and reerection of a tank. API 650 is directed towards new construction.

The general practice followed by the petroleum industry during the dismantling and reerection of a tank is to use standard 650 as far as practical. There are some things that cannot be done during reconstruction of a tank that is required by 650 for new construction.

Mr. FOGLIETTA. Would you suggest any additional regulations, or do you think that they're doing an adequate job with the present regulations?

Mr. CARTER. I would not suggest any additional regulations, but I do believe the industry should look into developing a standard for dismantling and reconstruction of a tank. And as a matter of fact, API has established a task force to look into just that thing.

Mr. FOGLIETTA. I thank you, Mr. Carter.

My next question would be directed to Dr. Berkey. Could the impact of this spill, which you describe to us, have been mitigated, and if so, by which regulations existing which were not followed, or by what regulations would you suggest be added to the existing regulations?

Mr. BERKEY. Let me start out by saying that many potential problems associated with the spill were mitigated, that even during the whole course of the event, we felt that it was not a directly life-threatening event. Water was being monitored. The location of the spill was understood. The principal focus was on public health protection, and water supply protection. And as necessary, water supplies shut down their intakes and stopped taking water in, when they couldn't handle it with their treatment systems. So that's all covered under existing rules, procedures and operational aspects of the various water companies involved.

Could something additional been done to mitigate it? I think we have a very dynamic, very complicated situation here. When a river system that large, it's clearly the headwaters of the largest system in the Country, you have flows that at the spill site were five million gallons per minute flowing by the site. In the Ohio it

jumps quickly to above 10 million gallons per minute. These are massive volumes to attempt to do things with in order to mitigate the kinds of impacts. So we had to take what we got. And what we got was emulsified oil that went down in the water column. We took steps to protect water supplies, all of those sorts of things.

I think that something that could have been done that was not done, was to increase the amount of information that was made available. We were in the thick of the event, and we had difficulty getting accurate data on concentrations, accurate information on the location—in quantitative terms, I'm not talking qualitatively—so that we could deduce from that some very critical things about whether certain public water supplies really were in danger. Or had we had the responsibility to assess the data after the spill passed Wheeling, and after it went through the Willow Island Lock and Dam, I think we could have allayed a lot of fears downstream about what was going on.

Mr. FOGLIETTA. Would you compare the impact, environmental impact of this bill, as to others over the last decade, in severity?

Mr. BERKEY. It is up there, but in a flowing river system, you have a lot of things going for you. This particular spill occurred in winter, which is the most dormant biological period, when a number of species are inactive, and the level of activity, spawning and so forth, is not large. So that was a plus.

When you look at in the spectrum of things, it will rank as one of the most significant events, but diesel oil No. 2, while it has some toxic components, is not considered a highly toxic material overall. This particular incident was far less damaging than the Rhine River spill that occurred about a year and a half ago, which actually killed, wiped out, all life in the river for 200 miles. We don't have that situation here. We have a situation where the effects are going to be much more subtle. The short-term effects, I think we've pretty well digested and haven't been that large. Now the long-term effects need to be carefully looked at so that we don't get surprised by something unexpected.

Mr. FOGLIETTA. I thank you, Dr. Berkey.

Mr. Knoy, does the carbon content of steel used in building the tank affect the tank strength, and what are the affects of the temperature variations, such as that experienced by the Ashland tank?

Mr. KNOY. Well, let me preface my remarks, by stating that I'm not a metallurgy expert, such as the Battelle people, but in general, the carbon content will increase the tensile strength. However, it does have some adverse affects concerning its ductility, and it's ability to take impact, and brittleness. It has negative affects that way.

Mr. FOGLIETTA. I'm sorry, did you comment on the temperature variations?

Mr. KNOY. Yes—I'm sorry. Brittleness usually is affected by temperature, and if the carbon content is not controlled adequately, as would be in today's steels which are used in the construction codes, if carbon content is not controlled, along with other metallurgical contents, and the steel reaches low temperature, it is quite easy to incur a brittle fracture if you have a notch or something to impart the start of a fracture.

Mr. FOGLIETTA. What is your professional opinion as to the maximum useable life of a petroleum product storage tank?

Mr. KNOY. I really believe that it's indefinite, as long as corrosion does not take its toll on the thickness of the steel. The same is true of water storage tanks. We have, for instance, water storage tanks of over 100 years in life, which are serving their municipal water systems quite adequately.

Mr. FOGLIETTA. Is there anything to suggest that the dismantling and reassembly of a tank makes it inherently less capable of withstanding the stresses for which it was originally designed?

Mr. KNOY. If improper procedures are used, dismantling and reerecting a tank could make it less capable than the original design. Certainly precautions need to be taken concerning where the cuts are made, and what sort of deformations are allowed to occur in the steel when it's reerected.

I might add, that API does have some very stringent codes concerning the roundness and verticalness, and what's called peaking and banding, in other words, not to have the tank have a lot of in and out places, which could occur in a reerected tank.

This is my opinion, that if the API standard for new tank construction is followed during the dismantling and reerecting of a tank, and if you take into account the type of steel that was used in the original construction, there's certainly no reason to have fear of a reerected tank.

Mr. FOGLIETTA. I thank you, Mr. Knoy.

Mr. Bunning?

Mr. BUNNING. I have no questions.

Mr. FOGLIETTA. I want to take this opportunity to thank the gentlemen of the panel, all witnesses who appeared here today, especially Congressman Walgren and Senator Heinz, the members of the staff who worked so efficiently for us today, and you, the public, who are interested in this hearing, and other members of the committee.

Thanks again, and this subcommittee stands adjourned.

[Whereupon, at 3:05 p.m., the subcommittee was adjourned.]

[The following was submitted for the record:]

STATEMENT OF THE HONORABLE JOHN HEINZ
BEFORE THE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES
ON REGULATING ABOVE GROUND STORAGE TANKS
May 26, 1988

Good morning, Mr. Chairman. Before I start, let me say that I am happy to see Congressman Walgren here this morning. He is doing a fine job representing my old district - especially when it comes to disasters, of which we seem to have more than our fair share.

Doug Walgren has introduced a far-reaching bill to address problems revealed by the Ashland oil spill. However, I am concerned that such a comprehensive approach may be impossible in these times of unprecented budget deficits and strain on the Environmental Protection Agency's missions: clean air, clean water, superfund. The Ashland oil spill was the result of mistakes. I trust that Ashland has learned from its mistakes and that Congress has too. Quite frankly, unless there is an expansion in the EPA budget, our regulators won't have the resources to perform new missions. And. performance is what we want to see. When an agency has insufficient resources, it does an insufficient job. The IRS Claims Processing Center in Philadelphia is a good example - unfunded, it was trashing

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returns, incorrectly dunning, and making mistakes on returns. When given the resources it needed to handle its work load, significant improvements were made. I do not want to put EPA in the IRS Processing Center's position and threaten important programs such as Superfund and the clean water programs. That is why my legislation takes a targeted approach.

Mr. Chairman, I applaud you for holding today's hearing to investigate the one million gallon diesel fuel spill from the four million gallon storage tank located on the Monongahela River in January of this year. This catastrophe needs to be fully investigated. And Congress must act to prevent another spill like the one in January of this year on the Monongahela River.

The disaster that we all witnessed would have been far worse were it not for the efforts of the Allegheny County Commissioners, and their able chairman, Tom Foerster, the local fire and police forces and other emergency management officials in Western Pennsylvania. Local authorities reacted immediately and efficiently to contain much of the spill. For that, a great many people downstream along the Ohio River can be grateful.

Nevertheless, we can't continue to rely on being protected solely by local officials' heroic response. We all saw how true the old adage "oil and water don't mix"

was. We also saw that an ounce of protection would have been worth a pound of cure--or in this case, a four million gallon tank releasing a million gallons of No. 2 diesel fuel into the rivers.

As the Committee is well aware, this million gallons of spilled diesel fuel fouled the Monongahela and Ohio rivers, which provide drinking water to numerous communities along the both rivers. As the comet-like head of the oil spill made is its way down the rivers, many Pennsylvania, West Virginia, and Ohio communities -- Robinson, North Fayette, West View, Midland, Toronto, Wheeling, and Sisterville, to name a few -- were forced to close or heavily restrict their water intake. All-in-all, the EPA estimates that 830,000 people, more than double the population of Pittsburgh, had had their drinking water affected before this black tide of polluted water dissipated. It is too early to tell what the environmental impact will be. Federal, state, and local agencies are assessing the long-term environmental damage to the river and ground water, to the river beaches and the river wildlife.

But Mr. Chairman, it is not too early to take action to ensure that this can never happen again, and so I, along with Senators Mitchell, Durenburger, and Specter introduced S. 2020, the Above Ground Storage Tank Spill Prevention Act of 1988. Our legislation is designed to prevent another

environmental catastrophe like the one we witnessed in Western Pennsylvania.

Unfortunately, this environmental disaster made us aware of a gap in existing environmental regulation. The gap I speak of is lack of federal and state requirements to monitor the use and operation of above ground storage tanks that contain large volumes of liquid petroleum products. As I understand the existing requirements, state and local law may require an owner or operator of an above ground storage tank to obtain a permit for construction of the tank and to get an inspection of the tank after construction is complete. However, these regulations vary widely from locale-to-locale, the regulations are often difficult to enforce, technical expertise to do so may be lacking especially at the local level, and there is not a regular means of monitoring these tanks after these permits have been issued. In addition, the federal regulation applies only to containment plans and does not address tank integrity.

Experience has shown us that large capacity above ground storage tanks that have been operating for a long time or that have been altered through reconstruction or relocation need to be regulated to assure that the tanks retain their integrity.

Mr. Chairman, the Above Ground Storage Tank Spill Prevention Act of 1988, S. 2020, will require EPA to promulgate national requirements concerning an identifiable class of above ground storage tanks, specifically those tanks that pose a risk of catastrophic failure, such as rupture or collapse. This class of tank has the capacity to contain at least one million gallons of petroleum and are at least 30 years old, or have been relocated, or reconstructed.

Mr. Chairman, as I speak, I am informed that the President of the Ashland Oil Company, Mr. Hall, is in Pittsburgh holding a press conference to announce the release of the Battelle Lab's report on the cause of the diesel fuel tank rupture in January. What Battelle found was that the primary, and indeed sole, cause of the tank failure was an existing flaw in the steel shell. That flaw was caused when the tank was initially constructed in Ohio. The existing flaw was further stressed during the reconstruction in Floreffe, to the point of catastrophic failure, as we saw. That report, I suggest, Mr. Chairman, clearly supports the point of our legislation, that we, in particular, regulate reconstructed or relocated above ground storage tanks.

Focusing the regulatory efforts and resources of the federal and state environmental agencies on the tanks that exhibit tendencies to fail catastrophically is the

appropriate legislative response to the Ashland accident. In consideration of the existing budget constraints, I believe that we must resist creating a broad-based above ground storage tank program. As the scope and extent of environmental problems expand along with the budget deficit, Congress needs to be judicious in imposing new requirements.

S. 2020 would require EPA to develop regulations applicable to this class of above ground storage tanks. It would require either EPA or an EPA-approved state program to implement and enforce these regulations. It would require owners or operators of tanks that experience a failure and spill their petroleum contents into the environment to take corrective action. And it would require states to compile an inventory of above ground storage tanks.

These regulations will ensure that the tanks are being properly maintained and continue to be used for the purpose for which the tanks were designed. These regulations are also intended to ensure that the party responsible for a spill follow EPA procedures and be financially responsible for a proper cleanup.

These new inspection and permitting requirements are intended to prevent environmental contamination through improved safeguards. Inspections by trained experts will reduce the risk that a tank would fail. Periodic reinspections and permit renewals will significantly

contribute to reducing the risk of catastrophic failures. Requirements to properly close a tank at the end of its useful life will prevent spills from a tank that is no longer required to be monitored and inspected.

This legislation also addresses cleanup requirements in the event that the regulatory safeguards fail to prevent a spill. Under its provisions, a tank owner or operator must report a spill to the regulatory agency, either EPA or a state agency. Owners would also be required to take corrective action in response to a spill. Such corrective action would include cleaning up the environment -- surface and ground water, surface and sub-surface soils, and the air, if necessary. As in this recent tragedy, supplying alternative drinking water sources may be required.

Owners and operators would also be required to demonstrate that they have the financial ability to take all required corrective actions without delay. If an owner or operator cannot or does not take corrective action as required, the EPA or EPA-approved state would be required under this bill to take corrective action and impose penalties.

In order to ensure that EPA or a state agency has immediate access to sufficient funds to cleanup a spill and assist injured people where there is not a responsible party, our bill allows the Leaking Underground Storage Tank

Trust Fund to be used. The "LUST" Trust Fund, financed by a tax on gasoline, will be sufficient to pay for the cleanup and compensation for leaks from underground storage tanks and catastrophic spills from above ground storage tanks.

As I said earlier, oil and water don't mix. Our legislation is carefully designed to see that we do everything possible to keep them apart. It corrects an existing gap in our environmental regulation, and in the unfortunate circumstances of another occurrence, provides for a quick, orderly, cleanup.

Mr. Chairman, I look foward to working closely with the House and your committee to pass legislation as a means to prevent another environmental tragedy like the Ashland spill from happening again.

Testimony of

Congressman Doug Walgren

before the

Subcommittee on Oversight and Investigations

of the Committee on Merchant Marine and Fisheries

May 26, 1988

Thank you for the opportunity to testify today on the oil spill in Floreffe, Pennsylvania on January 2 in my district. I applaud this committee's long history of leadership in this area.

I have introduced H. R. 4098 to address the safety of above-ground storage tanks, legislation arising from this incident which is cosponsored by Congressmen Luken, Mazzoli, Hubbard, Gray, Applegate, Murphy, Kolter and Bates. We have offered this bill as a vehicle to solicit discussion and guidance from many interested parties in an effort to develop legislation in this Congress.

The Floreffe Accident

Suddenly, on January 2, 3.8 million gallons of number two diesel oil gushed from the collapse of an above-ground oil storage tank, owned and operated by Ashland Petroleum Company near Pittsburgh. The 40-year-old tank had been cut apart, moved from Cleveland and reconstructed. It was being filled with oil for the first time at the time of the collapse. Approximately 715,000 gallons poured into the Monongahela River; less than 30% of that has been recovered. Diluted along its course, the slick from the spill has now traveled the length of the Ohio River forcing action to protect the water supply in four states.

Immediately after the rupture, 1,200 in my district people had to be evacuated from their homes because of the potential of fire. The drinking water supplies of at least 1 million people were affected with some communities having no water for eight days. Businesses in Pittsburgh had to close. Fish and waterfowl were killed. The long-term environmental effects of the spill are still unknown and may be with us for years. Experts from the University of Pittsburgh are studying these effects and will testify later on their findings.

We still do not know what caused the tank to collapse, but immediately after the accident, I asked the National Bureau of Standards to investigate the cause. We know that the tank suffered what is termed a "brittle fracture" meaning the metal skin of the tank instantaneously burst without any warning. NBS will report in full on the cause of this accident in mid-June. Hopefully, we can learn how to avoid it in the future.

Any discussion of this incident deserves a commendation of the many private, local, state and federal authorities who responded promptly and worked together to contain the spill. While I have criticized the Environmental Protection Agency for taking too long to take charge, I do believe that given the weather and time of the accident -- a Saturday at 5:10 p.m. -- everyone pulled together and did an impressive job of responding.

Current Federal Involvement

I have been dismayed to learn that federal regulation of above-ground tanks is limited at best. First, there is virtually no regulation of the structural strength required for tank safety. There are only voluntary industry practices. Second,

there are some regulations for spill containment, but their enforcement appears to be very irregular. EPA has never inspected the spill containment system for this tank.

Current EPA spill containment regulations are broad and vague, essentially leaving the industry in the role of setting its own standards, policing its own operations, conducting its own inspections and setting its own standards. For example, EPA does not require the SPCC plan to be modified when a tank is relocated or rebuilt until six months after the tank is in operation. EPA regulations allow a new or rebuilt tank to operate without an inspection. The Pittsburgh tank had been, in different phases, under construction for a year and a half, but Ashland did not amend the spill plan until two days after the spill.

Industry standards may be generally good guidelines and if followed, can prevent all sorts of mishaps. However, because they are in most cases voluntary, they give little assurance of safety to private citizens. If there is a tragedy, as we have painfully learned, there is little recourse for the federal government but to impose minimal fines that hardly fit the scale of the damage incurred by communities, governments, individuals and natural resources.

Several agencies address tanks and spills within their jurisdiction, but none directly address the Ashland collapse:

- o The Coast Guard responds to spills in waterways from vessels and regulates the design of vessels.
- o EPA addresses spills on land and into waterways from facilities, but as I have outlined EPA does not regulate structural tank safety and the spill containment regulations are spotty.
- o The Superfund Hazardous Waste Cleanup program does not

cover petroleum.

o The Solid Waste Disposal Act regulates underground storage tanks, but not above-ground tanks.

o The Hazardous Materials Transportation Act regulates the movement of hazardous materials. Oil is not considered to be hazardous.

o The Department of Interior regulates off-shore oil activity.

o The Pipeline Safety Act regulates oil flowing through pipelines.

Somehow, in terms of federal law, above-ground tanks have fallen through a very big crack.

H. R. 4098, The Tank Spill Prevention Act of 1988

H. R. 4098 would put into place some tough requirements and a clear enforcement program that hopefully will help prevent another spill like the one we had in Pittsburgh.

The Tank Spill Prevention Act would amend the Solid Waste Disposal Act, adding a Part 2 to subtitle I.

The bill would require EPA to publish regulations prescribing standards for all above-ground storage tanks with a capacity greater than 4,200 gallons that contain certain regulated substances and petroleum, as defined by the Solid Waste Disposal Act. (Farm and residential tanks would be excluded.) The standards would cover design, siting, construction, fabrication, testing, inspection, maintenance, modification and release and spill detection and prevention. As I had hoped, the bill is generating some discussion on which tanks should be covered and which should not be. I selected the 4,200-gallon cutoff because this is the smallest tank addressed by the American Petroleum Institute's tank current guidelines.

Regulations would require a spill and leak prevention system

for each tank with secondary containment sufficient to contain all spills and leaks. The tank and physical construction of the facility would be required to reflect good engineering practices. The bill would also require a spill and leak prevention plan, including training of personnel, assurance of readily available cleanup equipment and procedures for cleanup, including notification of local officials and the National Response Center. The bill would authorize EPA to require owners or operators to maintain evidence of financial responsibility for tanks.

The problem with voluntary standards is that there is no enforcement or oversight by any level of government. The Tank Spill Prevention Act would require EPA to enforce the regulations and standards unless a state receives EPA approval for a state enforcement program that is as stringent as the federal program.

To begin, each owner or operator would be required to have each tank inspected by a qualified independent professional engineer within two years of enactment. Once every three years thereafter the owner or operator would have to test or inspect. In each case, the inspection would have to be certified by an independent professional engineer and a copy sent to EPA or the state.

The bill would require testing of all tanks, including rebuilt tanks, before beginning operations. No rebuilt tanks would be allowed to operate until the tank is inspected, tested and certified by a qualified independent engineer and approved by the EPA or the state.

EPA or states would be required to conduct periodic inspections to insure compliance with the regulations. Funding

for the federal and state enforcement programs would be provided by the Tank Spill Enforcement Fund, created by user fees collected on tanks, based on size.

The bill would make owners or operators liable for cleanup of spills or leaks, restoration of natural resources, real or personal property damage, subsistence loss, and loss of certain revenues and profits, including replacement water supplies and water treatment. When the owner or operator fails to respond to a spill or leak in a proper or a timely fashion, the bill would authorize EPA to direct the cleanup activities using funds from the Leaking Underground Storage Tank Fund. Funds expended by the EPA could be recovered from the party responsible for the leak or spill.

The bill would impose the following penalties: for failing to provide information or providing false information, up to $10,000; for failing to comply with the requirements of the bill, up to $10,000 per day of non-compliance; for knowingly failing to comply with any requirement, imprisonment for not more than 5 years.

H.R. 4098 has a specific provision to prevent pre-empting state programs that are more stringent.

The Bill and Current Policy

There are several measures in this bill that specifically address the Pittsburgh tank collapse and improve current law and regulations. Had these provisions been in force, the chances of the Pittsburgh accident would have been greatly decreased.

First, the bill requires specific regulations and standards and a concrete enforcement program by the federal and

state governments.

Our bill would have required Ashland to test the tank before using it. This is not now required. (The industry-recommended test is to fill the tank with water to test for strength before filling the tank with oil. This was not done.)

The bill would require assurances of an adequate spill containment plan and prompt notification of an accident to local governments. The plan would be more comprehensive that that required now, clearly requiring training of response personnel, including contractors, and assurances that adequate equipment is readily available.

H.R. 4098 would require the Spill and Leak Prevention Plan to be kept up to date, reflecting changes in the siting and structure. Moreover, the bill would require that the spill plan address each facility specifically, taking into account the siting, the environment and other unique features of individual sites.

In terms of tank modifications, current regulations require the spill prevention plan to be updated 6 months after the tank begins operations. Under our bill, a modified tank could not be operated until the plan has been amended and certified by an outside engineer as meeting good engineering practices and until the enforcement agency has been notified of the certification.

This bill would require an engineer not permanently employed by the tank owner or operator to certify that tanks, spill and leak prevention systems and spill and leak prevention plans reflect good engineering practices. Current regulations do not require the engineer to be independent of the tank owner or operator.

Thank you again for inviting me to share these thoughts and suggestions with you. I look forward to working with you to develop comprehensive legislation to help prevent future accidents.

OPENING STATEMENT OF THE
HONORABLE HELEN DELICH BENTLEY
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
OF THE
HOUSE MERCHANT MARINE AND FISHERIES COMMITTEE
MAY 26, 1988

Thank you, Mister Chairman and thank you Mrs. Schneider.

I want to commend both of you for calling this subcommittee hearing today to examine in detail the circumstances surrounding the collapse of the oil storage tank near Floreffe, Pennsylvania.

All of us on this subcommittee, I am sure, share the same concerns regarding the potential catastrophic effects such an incident can have on the surrounding population, wildlife and the environment.

I am particularly interested in this investigation and its findings because hundreds of oil storage tanks dot the shoreline of the Port of Baltimore.

The collapse of any one of those tanks could create health and environmental problems of catastrophic portions within the Port and to the aquatic life in Chesapeake Bay.

A review of the information available about the Ashland Oil Company accident, generates a number of unanswered questions regarding its cause. I hope this inquiry will shed some light in this area.

However, I want to commend Ashland executives for the responsible approach they took from the outset in addressing the monmouth task of cleaning up the spilled oil, as well as the concerns of the affected communities.

I look forward to hearing their testimony today and the testimony of the other panelists.

Thank you.

STATEMENT OF CHARLES JARVIS, DEPUTY ASSISTANT SECRETARY FOR POLICY, BUDGET AND ADMINISTRATION, U.S. DEPARTMENT OF THE INTERIOR, BEFORE THE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS, HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES, MAY 26, 1988

Mr. Chairman, I am Charles Jarvis, Deputy Assistant Secretary for Policy, Budget and Administration of the Department of the Interior. We would like to thank you for the opportunity to testify before the Subcommittee on the Federal response to the spill of diesel fuel into the Monongahela River in January of this year. I have overall management responsibility for overseeing and coordinating Interior's participation in the National Contingency Plan (NCP) for responding to oil spills and hazardous substances releases. My office represents the Department on the National Response Team, and we have nine (9) Regional Environmental Officers throughout the U.S. who are Interior's members on the standing Regional Response Teams (RRT's). These teams were set up by the NCP to provide assistance quickly when incidents of this nature occur. Promulgation of the Department's optional procedures for use by Federal and State natural resource trustees to assess damages to natural resources as a result of oil spills, is also within the purview of my office.

It is in these two capacities — assisting response under the NCP, and assisting in assessing any damages to natural resources — that this Department is involved in the Ashland spill incident. The Department's initial role consists of responding to the request of the On-Scene Coordinator who is in charge of the operation. In this case, the Environmental Protection Agency (EPA) is the lead agency. The Department does not have responsibilities with regard to certification, permitting or operation of this facility. Nor does it have responsibilities associated with containment and removal of spills on non-Interior lands. These and other activities fall primarily within the jurisdictions of the United States Coast Guard and the EPA. Our role consists of making sure the Department's appropriate elements are mobilized to respond to technical assistance and advice requests by Federal on-scene coordinators or States, to evaluate damages to natural resources, and to ensure protection and restoration of natural resources when our lands or other trustee resources are involved.

We in Interior were notified of the incident through the standing RRT procedures. Our Philadelphia and Chicago Regional Environmental Officers have been participating fully as members of the incident-specific RRT, which was established for the Ashland Oil Spill. This team participated in daily conference calls over the first 8 to 10 days of the incident. The Department's role includes ensuring involvement of our bureaus as needed. In this case, the Fish and Wildlife Service (FWS) was the primary bureau and provided guidance throughout the response to the incident with the States' natural resources agencies along the river to determine actions necessary to prevent or alleviate injury to fish and wildlife resources.

After the FWS received notice of the incident, their field staff in Pennsylvania and West Virginia immediately contacted various State agencies to determine the extent of the spill, including whether there were any observable damages to fish and wildlife resources.

FWS offered to participate in efforts to rescue waterfowl, collect fish samples, help organize bird-cleaning stations, and other related actions. During the first few days of the spill, our contacts were reporting to us that impacts in the Monongahela River did not appear to be such that our on-scene help was needed at that time. Nevertheless, bureau staff helped to arrange for the Tri-State Bird Rescue Team which operated in Delaware, Pennsylvania, and New Jersey, to travel to the affected area, to set up cleaning stations, and to coordinate efforts to clean birds affected by the oil.

Four days later, when the oil reached the West Virginia border, and the magnitude of the spill became better known, FWS biologists assisted West Virginia Department of Natural Resources (DNR) personnel in rescue attempts involving waterfowl (Canada geese, mallards, black ducks) near Wheeling, West Virginia. FWS staff continued to assist the Ohio River Valley Water Sanitation Commission (ORSANCO), DNR, and the EPA with water sample collections, observations of fish and wildlife, and participation in press conferences.

During the second week of the spill, the FWS was requested by the DNR to help with field investigations and collections of dead fish, especially in the lock chambers of

the locks and dams. Because of extremely cold air and water temperatures and ice on the river during the incident, it was believed that many dead and dying fish would never reach the river surface. In addition, the bureau staff participated with DNR personnel in an organized effort to conduct shoreline counts of dead fish using the American Fisheries Society's methodology for estimating fish kills. Approximately 40 State and Federal personnel participated in this particular 3-day effort which covered about 120 miles of the Ohio River. The participants were also directed to collect affected birds from the river for the DNR.

To assess possible impacts to the endangered pink mucket mussel (Lampsilis abrupta), FWS and DNR biologists collected specimens of more abundant mussel species at two different mussel beds located approximately 177 and 290 miles down river from Pittsburgh prior to the arrival of the oil and during the presence of the oil. Bird, fish, and mussel species are to be sent to the EPA laboratory in Cincinnati this week. Submission was delayed pending final collection of mussels and completion of submission of other samples through the bureau's Patuxent Analytical Control Facility (PACF).

The longer range repercussions of the January spill for this Department are in the area of natural resource trustee responsibilities, authorized by Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). Executive Order 12580 delegates responsibility to this Department to act as a Federal trustee, and Subpart G of the NCP further describes delegations to Federal trustees. CERCLA also authorizes State trustees for natural resources, with these trustee officials to be appointed by the Governors.

There are continuing follow-up trustee activities in determining the extent of injury to natural resources and the potential for a damage assessment. It is the States which are the major trustees of resources likely to have been affected by the Ashland Oil Spill. In addition, this Department has trustee concerns related to the pink mucket mussel and to migratory birds. Because of requests by State personnel for assistance in understanding the implications of the assessment procedures, we have assumed a lead role initially in coordinating with interested parties and explaining to all participants, including representatives of the Ashland Oil Company, the process which would be

needed for doing a natural resource damage assessment under CERCLA. We are working with the ORSANCO, the existing interstate commission responsible for water quality in the Ohio River, in providing an organizational framework within which all the natural resources trustees can work together.

In our coordination role with Ashland and the States, we took the initiative to contact the States of Pennsylvania, West Virginia, Ohio, Kentucky, Indiana, and Illinois, urging that they make the formal designation of their trustee agencies, and notify us. We have just received the last of the notifications from these 6 State Governors. These representatives and the Department will cooperatively participate in a steering group, which will draw conclusions based on information from technical work groups for resolution of impacts to trustee resources.

In early February, technical work groups were formed to implement field studies to assess the long-term impacts of the Ashland Oil Spill. The FWS is participating in that effort, concentrating on the trustee species for which we are responsible. They have monitored and will continue to review follow-up studies on impacts to aquatic resources and waterfowl downstream of the spill site. Potential residual affects will be studied through the end of this year.

At the present time, the technical representatives from trustee agencies in the States most affected are reviewing and evaluating available information and identifying needs for further information gathering, in order to develop proposals for the official trustees. Although Interior's trustee role is a limited one compared to the States, we will coordinate the initial meeting of the Governors' trustee designees to review the options developed by the technical staffs. The Department will continue to work with the States and offer guidance and assistance on the natural resource damage assessment process, including the use of voluntary procedures. We will also continue working closely with the States on issues related to species under our trusteeship.

Forecasting the schedule of future actions is difficult because of the many agencies affected and interested, and the complexity of the information to be considered. There will be a meeting of the technical steering committee June 7, and we

would expect the initial meeting of the official trustee principals shortly thereafter, by late June or early July. Then, there will follow a sequence of activities wherein the biological, water quality and other technical information will become the basis of policy decisions by these designated trustee officials regarding natural resource damages.

Based on our experience with this incident, the longstanding Federal response mechanism established under the NCP functions well. It is, however, too soon to evaluate the effectiveness of the CERCLA natural resource damage assessment provisions.

This concludes my prepared testimony. I would welcome any questions that you may have.

STATEMENT OF
JAMES M. SEIF
REGIONAL ADMINISTRATOR, REGION 3
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON MERCHANT MARINE AND FISHERIES
HOUSE OF REPRESENTATIVES
MAY 26, 1988

Mr. Chairman and Members of the Subcommittee, I am James M. Seif, Regional Administrator of the Middle Atlantic Region of the U.S. Environmental Protection Agency. I am pleased to appear before you today to discuss the massive oil spill in Floreffe, Pennsylvania in January, and I hope that the work of this Subcommittee will decrease the likelihood of future spills and increase the ability of industry and government to contain and respond to any spills that may occur. With me today is Tim Fields, Director of EPA's Emergency Response Division, to discuss related national regulatory issues under the Clean Water Act and the agency's current review of the Spill Prevention Control and Countermeasure program.

It is appropriate that the Committee will receive testimony from both industry and government, because it is the combined public and private sectors which must confront this very important public health and environmental risk management issue.

As a native Southwestern Pennsylvanian, with strong roots still in that community, I can assure you that my interest in the spill and its effect on the area's people and environment go beyond my responsibilities as a Federal environmental manager from Philadelphia.

I would like to discuss with you:

- the nature of the spill;
- the Federal statutory authority under the Clean Water Act, including EPA's interim findings at a recent field inspection of Ashland Oil's Floreffe facility;
- EPA's initial and continuing response;
- the impact on numerous public water supplies and on the environment, both here in Pennsylvania and downstream;
- the cooperative nature of the cleanup among Ashland Oil Company and many Federal, State and local agencies; and
- the scope of EPA's ongoing investigation.

A Massive and Sudden Oil Release on January 2, 1988

Although there remain many unanswered questions about what happened, we know that approximately 3.8 million gallons of diesel fuel was rapidly released from a recently reconstructed tank at Ashland Oil's Floreffe facility late in the afternoon of January 2, 1988. It appears that the sudden and complete collapse of the tank caused upwards of one million gallons of the escaping diesel fuel to immediately pour up and over the on-site containment dikes and enter the Monongahela River at mile point 24.5 through a drainage system on an adjacent property.

The oil plume moved rapidly down the Mon River due to the relatively swift river flow, estimated to have been greater than 3 knots. We know that the plume reached Number 3 lock and dam almost immediately and Number 2 lock and dam (mile point 10) within hours, and that the flow of the plume over the dams emulsified the diesel fuel, dispersing it in a much lower concentration to a depth of approximately 15 feet.

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It is likely that the unpreparedness of Ashland Oil to contain and counter the spill, coupled with the severe winter weather and time of night, prevented the recovery of a much larger portion of the released diesel fuel prior to its passage over and emulsification at locks and dams 3 and 2. Unfortunately, the existing conditions made the complete recovery of the plume extremely difficult if not impossible. These conditions include river speed, weather, icing conditions, time of day, proximity to the dams, and the dispersable nature of diesel fuel. Thus, Ashland Oil, working closely with EPA and many other agencies since the morning of January 3, was in the regrettable position of trying to minimize the damage and hardships caused by the spill rather than containing it at or near its source.

The severe river and weather conditions in the first few days after the spill further diminished the prospects for recovery of the plume as it moved downstream. More than four months later we believe that all that can be recovered from the river has been recovered--approximately 210,000 gallons-leaving approximately 500,000 gallons in the river environment which will probably never be recovered. While I do not know how much Ashland Oil has spent in the cleanup and community assistance, government agencies have spent more than $3 million as a result of the spill. I understand that the Pennsylvania Emergency Management Agency has assisted communities in seeking reimbursement for their costs.

Mr. Fields is able to provide today information about the incidence and size of oil spills nationwide. By any measure, however, we know that the Ashland Oil spill at Floreffe is one of the largest inland spills that EPA has ever encountered. While there are, unfortunately,

several oil product spills each year in the million gallon range, most of these are of crude oil, which floats better, and in coastal or harbor waters, making them more readily contained with booms and related equipment.

Section 311 of the Clean Water Act

The Environmental Protection Agency's regulation of oil storage tanks requires a detailed prevention plan rather than technical requirements for the design, construction and testing of the tanks. Guidelines which accompany EPA's regulations do, however, suggest that tanks be periodically tested for structural integrity.

Section 311 of the Clean Water Act does establish a Federal program aimed at preventing and responding to the release of petroleum products to the surface waters of the United States. It is administered jointly by EPA and the U.S. Coast Guard: the Coast Guard administers the response fund, while the two agencies have designated which will be responsible for cleanup of spills in each stretch of river and coastline throughout the nation.

In general, EPA is responsible for responding to spills in inland waters, including the Monongahela River. In practice, the initial response is made by the agency or agencies whose personnel are first able to arrive on scene, with the actual recovery conducted by specialized contractors hired by the responsible private party or one of the two Federal agencies. It is encouraging that a growing number of State and local emergency response agencies, with the technical support of EPA, the Coast Guard and the Federal Emergency Management Agency, are developing the capabilities to respond to environmental emergencies such as oil spills.

The Clean Water Act and EPA's regulations have long recognized the main lesson of this spill, namely that it is much preferable to prevent or contain a spill on-site than to attempt to clean it up afterward. Thus, the owner of each above-ground oil storage tank larger than 660 gallons is required to prepare and implement a detailed, site-specific Spill Prevention, Control and Countermeasure Plan (SPCC). An SPCC Plan has many elements, including:

- the design and construction of adequate physical barriers to prevent release of spilled oil to surface waters;
- the training of personnel and response contractors to detect, report and counter spills;
- a procedure for prompt notification of designated response agencies, such as EPA, the Coast Guard and other State and local agencies; and
- review and certification by a registered professional engineer.

EPA has conducted a field inspection to help determine Ashland Oil's compliance with the SPCC regulations at the Floreffe facility, and we are pleased to provide staff of this Subcommittee a copy of our report. Our field inspection showed a number of significant findings:

- sufficient storage capacity existed within the secondary containment area to contain the entire volume of the collapsed tank;
- a surging wave-like release of diesel fuel over the lowest wall of the containment dike was the most likely cause for the release to the River;
- the SPCC plan for the Floreffe facility has inconsistencies concerning the volumes of tanks and containment areas; and
- the SPCC plan does not have a site-specific contingency plan for responding to oil spills.

EPA's review of the inspection report will soon lead to conclusions about overall compliance with the SPCC regulations. In cooperation with the U.S. Department of Justice, EPA will then decide about the need for,

and extent of, enforcement action against Ashland Oil. I understand that the Commonwealth of Pennsylvania is conducting its own compliance investigations, and I want this Subcommittee to know that EPA, the Commonwealth and other agencies are sharing information to speed up these investigations and to avoid duplication of effort.

EPA's Cleanup Oversight is What the Law Requires

On the evening of January 2, EPA was notified by the Coast Guard Marine Safety Office in Pittsburgh of the release at Ashland's Floreffe facility. During that evening, the Coast Guard official on scene conducted an assessment of the spill and performed initial oversight of Ashland's response. Although I believe it is apparent that the company was not prepared at the moment of the release to contain and counter the spill at the site, Ashland Oil did a good job since then, in cooperation with many State, Federal and local agencies, to mitigate the downstream impacts.

I want to emphasize that I am confident that EPA's ability under Section 311 of the Clean Water Act to take over the cleanup at any time, including EPA's ability to recover cleanup costs, and the likelihood of bad publicity for the company probably influenced Ashland Oil's commitment to perform satisfactorily after the spill reached the Mon.

When EPA's On-Scene Coordinator arrived early in the morning of January 3 from his post in Wheeling, West Virginia, representatives of Ashland Oil made a clear commitment to him to conduct a thorough cleanup. From the outset, Ashland Oil--primarily through specialized cleanup contractors--did whatever has been directed by EPA.

Of course, a mere assertion of willingness by a responsible party is certainly not enough to permit its performing the cleanup: we believed then, however, and continue to believe, that the company also had the financial and technical capabilites and the desire to conduct the cleanup. Before deciding that the cleanup should be conducted by Ashland Oil under Federal supervision, I met with the company's President, Mr. Charles Luellen, in the presence of EPA's On-Scene Coordinator, to try to gauge the depth of Ashland Oil's commitment and capability. Mr. Luellen assured me that Ashland Oil would do whatever EPA, after consultation with our colleagues in other agencies, directed it to do. In fact, in my presence he authorized company payment for barge-delivered and pipe-delivered water to several municipalities even before they made the formal requests for assistance.

Beyond that, and preparing for the worst, on that same morning, I activated an account number which would have speeded up a Federal takeover if it had become necessary.

Mr. Chairman, I am well aware that a number of respected government officials urged EPA to declare the spill to be a "Federal spill" and thereby relieve Ashland Oil of its cleanup responsibilities. Having been on call in the Governor's Office on that first morning of the Three Mile Island nuclear accident, I understand how Governor Casey and others responded to this immediate need for a total mobilization of whatever resources were required to protect the citizens and environment of Allegheny County and its downstream neighbors. In fact, this confidence expressed in EPA's ability to get the job done was very gratifying.

I was on scene myself when many of these requests were made, and I conferred several times with EPA Administrator Lee Thomas in deciding that Federal supervision of Ashland Oil's cleanup was equivalent in every respect to a Federal cleanup. I want to assure you that EPA was prepared to take over the cleanup the instant that the company's willingness or capacity fall short of what is required. This continually reviewed finding is what the Clean Water Act requires of me. Now, more than four months after the release, I believe that this has thus far been the correct judgment, both practically and legally.

Three practical considerations which influenced my decision were:

- The pool of specialized cleanup contractors hired by Ashland Oil are generally the same contractors available to EPA;
- We were, in fact, in charge, since under EPA's supervision, Ashland and its contractors were doing everything requested of them; and
- The Federal oil response fund is limited in size; it would therefore be irresponsible to deplete it when adequate funding was readily available and in use.

Protection of Water Supplies Was Our Focus

My experience at EPA brings me to agree wholeheartedly with the observations of many area citizens and local government officials that we do not appreciate the importance of a healthy water supply until it is threatened or interrupted by an emergency. For this reason, the primary focus of our water monitoring, interagency deliberations, technical assistance and overall public health responsibility has been the provision of potable water to the affected communities. It is a measure of much professionalism and hard work by hundreds of people, especially under the severe weather conditions confronting us in early

January, that water supply contamination and disruption was kept as low and isolated as it was. While I do not intend to understate the extreme distress caused in several communities by service interruptions, the facts are that water supply intakes were closed prior to contamination of treatment facilities, that the public was not exposed to unhealthful levels of oil or chemicals from the spill, and that alternative means of supply were made available in most cases within 24 hours. The residents served by Robinson Township Water Authority were without water for some period, while supply by barge and from other sources was being put into place. The people with direct water supply responsibility were of course aided by thousands of Western Pennsylvanians who abided by strict conservation measures.

Attachment 1 summarizes the duration of river intake shut down at water treatment plants in the tri-state area. Many of the treatment plant shutdowns were done as a precaution based on the monitoring data just upstream of the water intakes. Further, alternate sources of supply were available for most of the days of shutdown through conservation, interconnections with other suppliers, barge or water buffaloes. Local water supply officials, with technical assistance from State and Federal agencies, made the key operational decisions on when to shut down water treatment plants, how to treat, when and how to conserve, how to interconnect with alternate supplies and when to return treatment plants to service. Local officials, too, probably felt the brunt of the public's anguish and frustration during the first days of the response. I want to commend the skill and energy with which county and local government

responded, and hope that this unfortunate experience will improve our ability to serve the public during emergencies.

Environmental Impacts Are Not Yet Well Known

As the danger to public water supplies diminished, we were careful not to forget that the potential impact of the spill on waterfowl, fish, mussels and small game would take some time to estimate. EPA defers to the U.S. Interior Department, the Pennsylvania Fish and Game Commissions and similar agencies in other states for more authoritative information on this longer term result of the spill. It is our understanding that the Pennsylvania Commissions and the Pennsylvania Department of Environmental Resources have instituted studies to monitor these effects, some of which will persist as diesel fuel which cannot be recovered is gradually released into the river environment. While we know that fish kills and waterfowl deaths were reported in January, as time passes it may be increasingly difficult to isolate the effects of the recent spill from the effects of other toxic materials in the environment. EPA's biology laboratory in Wheeling has assisted the other natural resource agencies in conducting these studies.

Outstanding Cooperation throughout the Emergency

Although we must now turn our attention to preventing emergencies such as this oil spill, we recognize that emergencies take place and industry and government must be prepared to respond promptly and cooperatively. Attachment 2 lists most of the agencies which contributed to the emergency response, under the coordination of the Regional Response Team. The Regional Response Team, under the National Contingency Plan,

is activated to assist the Federal On-Scene Coordinator (EPA's Jerry Saseen in this operation) in managing the emergency operation. The many agencies listed on the chart were members of the Regional Response Team, which convened daily by conference telephone call to discuss all aspects of the response and to share information. The Regional Response Team convened for the Floreffe emergency was chaired by EPA's Tom Voltaggio. Contractor assistance by EPA's Technical Assistance Team and Ashland Oil's pool of cleanup contractors should also be commended for a difficult job well done.

Each agency has its own statutory authorities, technical and financial capabilities, experience and political leadership, and yet these were drawn together quickly and professionally by the Regional Response Team during the first days of the response. A very important task which the Regional Response Team is currently undertaking is to critique the entire operation, both technically and intergovernmentally. While the critique is not final and is still undergoing review and modifications by the RRT member agencies, there are some specific findings which it is anticipated will be made. These findings include: suggestions to improve communication and monitoring of surface water contamination. We must learn more about what went right and what went wrong, and I can report that once the operation was underway, much more went right than wrong. Under very extreme weather and river conditions, it is remarkable how well this large number of Federal, State and local agencies were able to work together.

Several Ongoing Investigations Will Continue

The bulk of EPA's, other agencies' and Ashland Oil's efforts during the initial month was devoted to recovering oil, monitoring the movement of the diesel fuel in the Mon and Ohio Rivers, assisting water suppliers and protecting threatened waterfowl. Greater attention was subsequently directed to learning what caused the collapse of the tank and how to prevent such releases to the environment in the future.

I mentioned a few minutes ago that EPA will soon conclude an investigation into the compliance of Ashland Oils' Floreffe facility with the SPCC regulations under the Clean Water Act. This is one of many investigations underway by EPA, the Commonwealth of Pennsylvania, Ashland Oil and other interested parties. I and members of my staff are working closely with the U.S. Attorney in Pittsburgh concerning EPA's continuing investigations. I want to assure you that EPA will determine the facility's compliance with all Federal environmental statutes and take whatever enforcement action is appropriate. Ashland Oil has informally agreed to conduct all necessary on-site investigations and cleanup of soil and groundwater contamination resulting from the spill. EPA along with the Department of Justice and the State of Pennsylvania is currently negotiating with the Company over the exact scope of future cleanup activities. Ashland has agreed to delay resumption of operations at the oil terminal until actions specified by EPA and the State are accomplished. These actions will include performing tank testing and obtaining appropriate State and local permits. In addition, Ashland just recently reopened their asphalt plant at the same location only after entering into a specific start-up agreement with the State of Pennsylvania.

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Secretary Art Davis of the Pennsylvania Department of Environmental Resources and I have made a commitment to share information and assist each other's complementary investigations. Further, since EPA's regulations are somewhat limited, EPA awaits the work of the Commonwealth, and the National Bureau of Standards in studying the failure of the collapsed tank and structural integrity of other tanks at the Floreffe facility. Finally, EPA has worked closely with the Ohio River Valley Water Sanitation Commission (ORSANCO) and its affiliated agencies in its monitoring of the Mon and Ohio Rivers in the aftermath of the spill. EPA transferred responsibility for coordination of sampling and monitoring to ORSANCO on January 12, 1988 and since then ORSANCO has been the principal communication link for industries and municipalities providing information on both the effects of the spill, as well as follow-up studies being conducted.

The massive release on January 2 of approximately 700,000 gallons of diesel fuel into the Mon River pointed out once again how suddenly our public health and natural environment can be damaged. This incident points to the need for greater care by owners of storage tanks.

After failing to contain and counter the diesel fuel release at the site, Ashland Oil did a good job conducting the cleanup and assisting local communities since January 2. It must also be pointed out that the Environmental Protection Agency, working with the Deparment of Justice and other Federal and State agencies, has been conducting a thorough investigation into the statutory compliance of the Floreffe facility. If enforcement action is appropriate, it will be taken. While EPA does not regulate tank design and construction, we were pleased that an investigation is being conducted into the cause of the collapse and await

its outcome.

I also want to take this opportunity to say how proud I was of the hard and skillful work performed by the professional response personnel of EPA, our contractors, and the many other agencies, water suppliers and contractors who have been on scene in Floreffe and on the frigid waters of the Mon and Ohio Rivers. A public health and environmental emergency has been managed very well thanks to these people.

Mr. Chairman, I would be pleased to respond to any questions which you may have at this time.

ATTACHMENT 1

Summary of Affected Water Treatment Plants

MILE POINT	PEOPLE SERVED	WATER COMPANY	RIVER INTAKE CLOSED	RIVER INTAKE OPEN	DAYS CLOSED
-24.5	530,000	West Penn, PA	1/3/88	1/06/88	4
4.5	160,000	West View, PA	1/3/88	1/10/88	8
8.6	9,000	Robinson, PA	1/3/88	1/10/88	8
36	9,000	Midland, PA	1/4/88	1/07/88	4
40	17,000	E. Liverpool, OH	1/4/88	1/07/88	4
42	3,800	Chester, OH	Intake closing not needed		
59	7,000	Toronto, OH	1/6/88	1/09/88	4
65	40,000	Steubenville, OH	1/6/88	1/10/88	5
86	68,000	Wheeling, WV	1/8/88	1/10/88	3
94	8,100	Bellaire, OH	Intake closing not needed		
137	2,000	Sistersville, WV	1/14/88	1/21/88	8
306	105,000	Huntington, WV	Intake closing not needed		
327	15,000	Ironton, OH	1/23/88	1/24/88	8
462	8,000	Cincinnati	1/23/88	1/27/88	4

ATTACHMENT 2

Agencies Participating in Regional Response Team

AGENCY	PRIMARY RESPONSIBILITIES
[Federal]	
Environmental Protection Agency	Overall coordination and direction Water and biology monitoring Advice to water suppliers
U.S. Coast Guard	Initial Federal agency on-scene Response technical assistance CWA sec. 311 fund administration
Federal Emergency Managment Agency	Response technical assistance Coordination with PEMA and ANG
National Oceanic & Atmospheric Admin	Modeling of oil transport Sampling technical asssitance
Army Corps of Engineers	Reconaissance and sampling Pumping operations
U.S. Dept of the Interior	Wildlife monitoring
Ohio River Valley Water Sanitation Commission (ORSANCO)	Modeling of oil transport Water monitoring
[State]	
PA Dept of Environmental Resources	Overall coordination and direction Advice to water suppliers
PA Emergency Managment Agency	Advice to water suppliers Coordination with National Guard
PA Army National Guard	Provision of water buffaloes
PA Game Commission	Monitoring waterfowl impact Saving damaged waterfowl
PA Fish Commission	Monitoring fish kills Water Monitoring
PA State Police	Advice to fire departments
WV Dept of Health	Advice to water suppliers
WV Dept of Natural Resources	Environmental monitoring
OH Environmental Protection Agency	Advice to water suppliers Environmental monitoring
KY Division of Water	Advice to water suppliers Environmental monitoring
[Local]	
Allegheny County Health Department	Air quality monitoring Advice to water suppliers
Allegheny County Emergency Mgt Agency	Evacuation Advice to local government Advice to water suppliers
Numerous water suppliers	Mgt of conservation, treatment and distribution
Numerous fire departments	Evacuation Advice to local government

STATEMENT OF TIMOTHY FIELDS, JR., DIRECTOR
EMERGENCY RESPONSE DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

MAY 26, 1988

Good morning, Mr. Chairman and members of the Subcommittee. I am Timothy Fields, Jr., Director of the Emergency Response Division of the U.S. Environmental Protection Agency. I am pleased to have this opportunity to brief the Subcommittee on current and proposed EPA programs and actions to prevent accidents similar to the Ashland Oil company incident that occurred in Floreffe, Pennsylvania, on January 2, 1988, from occurring in the future.

The EPA currently operates a program designed to prevent discharges of oil into the navigable waters of the U.S. or its adjoining shorelines. The program is known as the Spill Prevention Control and Countermeasure, or SPCC, program, and is defined in 40 CFR Parts 109, 110, 112, 113, and 114.

The SPCC regulations were developed in 1973 under the authority of Section 311 of the Clean Water Act. The SPCC program sets minimum standards for certain aspects of facility design, operation, and procedures. The program's requirements were intended to provide the flexibility needed to regulate more than 650,000 diverse facilities. The SPCC program regulates non-transportation related facilities that may reasonably be expected to discharge oil into or upon the navigable waters of the U.S. or

adjoining shorelines, and that have oil storage capacities of more than 660 gallons in a single tank or collectively 1,320 gallons or more above-ground, or 42,000 gallons or more underground.

The regulations require that a SPCC Plan be prepared within six months of commencement of operation and implemented within one year after commencement of operations. Whenever new tanks are installed at a facility, the SPCC Plan must be amended at the time of the change and implemented within six months. The SPCC Plan for the facility should follow the guidelines found in 40 CFR Part 112 for prevention and control of an oil spill. If this is not practicable, a strong contingency plan following the provisions found in 40 CFR Part 109 must be prepared. The SPCC Plan must also be certified by a registered professional engineer.

Some examples of facilities that may be subject to the SPCC regulations are: refineries, bulk storage terminals, onshore and offshore production facilities, office buildings, schools, hospitals, and farms. The precise number of SPCC facilities is not known, but it is estimated to be greater than 650,000.

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Since the January 2, 1988, accident at the Ashland Oil facility occurred, the Agency concluded that further investigation of this matter and related Federal, State, and industry programs in this area should be initiated. On February 2, 1988, Dr. J. Winston Porter, Assistant Administrator of the Office of Solid Waste and Emergency Response, formed the Oil SPCC Program Task Force. I was named chairperson of this Task Force and was charged with the responsibility to make recommendations regarding program changes to better ensure that similar spills do not occur in the future, or that if such a spill does occur, negative impacts on the public health and environment would be minimized. Dr. Porter requested that the Task Force provide him with a report by May 13, 1988.

The SPCC Program Task Force held its first meeting on February 23, 1988. The Task Force had subsequent meetings on March 17, April 14, and April 28.

During the course of the Task Force activities, four committees were formed to further examine issues that arose. One committee conducted a detailed review of the SPCC regulations; a second committee reviewed applicable State and Other Federal Regulations and Industry Standards; a third committee focused on SPCC Program Implementation; and a fourth

committee examined Tank Inventory information. Committee reports were discussed in detail at each of the Task Force meetings.

The Task Force was comprised of over 60 members, including representatives from various EPA Headquarters offices and all ten EPA Regions. In addition, representatives from the U. S. Coast Guard, the Office of Pipeline Safety, the Minerals Management Service, the Occupational Safety and Health Administration, the National Bureau of Standards, and other Federal and State agencies were involved. The large membership allowed the Task Force to examine numerous issues, and to compare spill prevention programs of other organizations with EPA's SPCC program. The information gained has provided the EPA and other agencies with many new insights.

During the preparation of the Task Force Report, Task Force representatives and I met with representatives of the American Petroleum Institute, the National Bureau of Standards, and Ashland Oil Company. These groups, along with the Region III Response Team, are preparing reports on the Ashland Oil spill. Advice, thoughts, and comments were solicited from each group on Task Force efforts.

On May 12, 1988, I briefed Dr. Porter on the findings and recommendations of the Task Force, and on May 13, 1988, the report was delivered on schedule. The recommendations of the

SPCC Program Task Force are undergoing internal review and evaluation. We will be glad to share with you our plan of action when the Agency has determined what it will entail.

Mr. Chairman, at this time, I would be happy to answer questions that you or the Subcommittee may have.

STATEMENT OF PHILIP W. BLOCK, VICE PRESIDENT
ASHLAND OIL, INC.
BEFORE THE U.S. HOUSE OF REPRESENTATIVES MERCHANT MARINE
AND FISHERIES SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
THURSDAY, MAY 26, 1988

Chairman Foglietta, Members of the Committee, I am pleased to have this opportunity to represent Ashland Oil, Inc., before your Committee.

Ashland Oil is the nation's largest independent refiner and a leading marketer of petroleum products to other independent marketers. We have been in business for more than 64 years. In the past 20 years, Ashland has diversified into a variety of other businesses closely related to our primary energy and chemical businesses. However, refining and marketing petroleum products remains our core business. As part of our supply and distribution network, we operate 28 light oil product terminals within our marketing areas. These terminals, 15 of which are river terminals, receive products from our refineries and store them until needed by customers. My statement describes Ashland's response to the recent spill at our Floreffe, Pa., terminal near Pittsburgh, a terminal that we have operated safely since 1940.

The facts of the spill are well-documented. At about 5 p.m. on Saturday, January 2, a four-million gallon storage tank collapsed suddenly while it was being filled. When it collapsed, nearly 3.9 million gallons of diesel fuel was released in a tidal-wave-like surge, flowing over containment dikes with such force that it dented an empty tank 100 feet away. About 715 thousand (715,000) gallons of diesel fuel subsequently crossed our property line and escaped through nearby storm sewers into

the Monongahela River, which joins the Allegheny River to form the Ohio about 25 miles downstream from our terminal. The path of the spill ultimately affected the water supply of suburban Pittsburgh and several communities downstream.

To provide a broader perspective of how Ashland responded to and managed the crisis created by the spill, it may be helpful to discuss our response in two phases: crisis response and long term response phases.

During the crisis response phase, our immediate priorities were three: No. 1, to try to contain and clean up the spill; No. 2, to minimize the impact on water supplies; and No. 3, to determine the cause of the collapse.

Our efforts to contain and clean up the spill were swift, but several factors were against us. Cold, dark and windy conditions as well as a swift current hampered initial clean-up and containment efforts. Since diesel fuel is lighter than water, the expectation was that the diesel would be caught by booms and skimmed off the top of the river. However, the diesel fuel entered the river through a storm sewer located near the discharge point of a power plant cooling system. The velocity of the cooling system effluent emulsified the diesel.

In addition, less than a mile downstream of the terminal, the Monongahela flows over a lock and dam, which caused additional emulsification. Thus, upon reaching Western Pennsylvania Water Company's intakes about 12 miles downstream early on the morning of January 3, the diesel had emulsified vertically throughout the river.

Even so, we believe the actions of our employees and contractors, working in cooperation with the various governmental agencies involved, were instrumental in containing and recovering as much of the fuel as possible under these conditions. In the first three weeks after the spill, the primary cleanup phase involved as many as 200 Ashland and contractor personnal, working in conjunction with the U.S. EPA and the U.S. Coast Guard.

Cleanup and containment activities were extensive. We hired contract cleanup crews with oil spill experience. Two special Coast Guard oil spill strike force units were brought in at Ashland's expense on Air Force transport planes. Some 20,000 feet of floating containment booms were placed on both the Monongahela and Ohio rivers. Skimming barges were used to retrieve fuel from the surface, while other barges deflected the diesel into collection areas. Vacuum pumps skimmed from the banks. Twice daily helicopter overflights of both rivers tracked the course of the spill and helped direct cleanup efforts. Other crews worked to retrieve the fuel from containment dikes and the terminal area. In a secondary clean-up phase which continued through May 1, clean-up crews and equipment were kept on standby at three points along the rivers, and weekly helicopter overflights were made.

Of the 715,000 gallons that went into the river, we recovered approximately 30 percent, or about 204,000 gallons. We've been told the EPA considers a 20 percent recovery very good. We have estimated the cost of cleanup at approximately $5

million to $6 million, not including costs incurred by the EPA and Coast Guard. Their costs will add to this total.

Of equal importance during the crisis response phase was the protection, provision and restoration of water supplies. We cooperated fully with local water authorities to maintain normal service or help restore it as soon as possible. In all, we offered or provided assistance to more than 17 communities from Pittsburgh to Louisville. We provided boats for water testing and flew water samples to Harrisburg, Pa. By truck and by barge, we sent nearly 8 million gallons of fresh water to affected communities. We paid for water treatment chemicals and equipment, pipelines to alternate water sources, for reactivating wells and for storage facilities. In short, we did everything we could think of and everything we were asked to do.

During this phase, Ashland also rapidly acknowledged responsibility for the tank collapse and the crisis it created. Within three days of the spill, Ashland Chairman and Chief Executive Officer John R. Hall and President Charles J. Luellen went to Pittsburgh to apologize publicly and at the same time promised to pay reasonable expenses incurred by government agencies in cleanup.

Less than a week after the incident, we delivered a $210,000 check to Allegheny County as an advance partial payment against county expenses related to the spill. In mid-January, we delivered a $165,000 check to Western Pennsylvania Water Company covering similar advances. Advance payments against expenses also were made to the Floreffe, Pa., Fire Department, the local

chapter of the American Red Cross, the Salvation Army, the National Audubon Society, and a wildlife rescue group, among others.

Within two weeks, Ashland established a Pittsburgh service office to coordinate cleanup and related activities and handle claims from government agencies. Crawford & Co., a nationally known claims adjusting firm with more than 20 years of experience in handling oil spill and environmental claims, was retained by Ashland's insurance carrier and opened a Pittsburgh office to handle claims from businesses and individuals. A toll-free telephone number was established to handle claims outside the Pittsburgh area. Subsequently, Crawford & Co. opened an office in Steubenville, Ohio, to process claims from that area.

Letters were sent to all families evacuated the evening of the spill, inviting them to submit a claim for evacuation expenses. Working with the Pennsylvania Emergency Management Authority, we established a mechanism to work with various state and federal agencies in order to process claims from federal, state, county, municipal and volunteer organizations which participated in cleanup.

To date, we have received more than 4,000 claims from businesses, individuals and federal, state and local government agencies. If all are valid, the total dollar amount is approximately $18 million, including the cost of cleanup. We have paid about half of the claims, for a total value of approximately $7 million in claims to date, including claims for

cleanup costs. More than 70 percent of the 2,500 claims made by individuals have been paid.

Our third priority in the crisis response phase was to take action to determine the cause of the tank collapse. We immediately began an internal review of the circumstances surrounding the tank's construction and collapse. As a result of this review, Ashland has announced previously that company employees departed from optimal procedures in permitting, constructing and testing the tank. Specifically, Ashland has announced:

- Ashland personnel did not secure a written permit before constructing the tank. Instead, they apparently relied on a conversation where they believed verbal approval had been given.
- The tank had been reconstructed at the Floreffe site using steel more than 40 years old, which previously had been used in a tank at an Ashland facility near Cleveland.
- Ashland employees used an alternate testing method rather than the preferred full hydrostatic test.
- X-rays taken during the construction process revealed a number of possibly defective welds in the tank.

Four employees from the engineering department and the trucks and terminals operating group subsequently were reassigned.

Ashland has stated that all future tank construction will be in full compliance with the material, welding and testing specifications of API 650.

As a result of the collapse of the Floreffe tank, a review of Ashland's tank facilities was undertaken to determine their physical condition. While the review is not yet completed, 146 facilities with more than 1,000 tanks have been inspected to date. Where appropriate, remedial actions indicated by the review have been undertaken or scheduled for the near future. Organizational and procedural changes to strengthen environmental compliance efforts are under review, and several changes already have been made.

With the crisis response phase essentially behind us, we have entered a longer term response phase, involving several distinct segments. These include

- o organizational and procedural changes previously mentioned;
- o development, with appropriate authorities, of a site remediation plan at the Floreffe terminal;
- o continued coordination with various government agencies investigating or reviewing the tank collapse;
- o handling approximately 20 class action lawsuits filed against the company as a result of the collapse and spill;
- o continued processing of claims; and
- o continued assessment of environment impact.

In regard to the Floreffe terminal itself, Ashland is continuing to negotiate with all appropriate agencies on all other issues related to the diesel fuel spill. Current

discussions include a process of bioremediation for surface soil affected by the spill, in which the soil would be tilled and compounds added to stimulate natural organisms which would effectively remove the diesel fuel. Ashland already has removed the soil from two small, unpaved areas at the terminal and put it on a synthetic liner in the dike containment area. Ultimate disposal will be addressed by the site remediation plan currently under negotiation.

As part of the site remediation investigation, Ashland drilled wells to test groundwater. Preliminary analyses of water samples from these wells indicate the presence of contaminants, including benzene and some chlorinated hydrocarbons in varying levels at certain points within the terminal. The compounds include vinyl chloride, tricloroethylene, dichloroethylene, 1-2 dichloroethane, 1-1-1 trichloroethane and hexachloroethane. Upon discovery of these compounds, Ashland notified the appropriate authorities. It should be noted, however, that we do not yet know the extent of contamination by some of the pollutants, because we do not yet have reliable data on all of the wells where some of these compounds may be found. Ashland is not aware of any drinking water wells, downstream of the terminal, which would be endangered by these compounds. Nor do we have any reason to believe that any of the compounds have migrated from Ashland's property.

Ashland has agreed to remove the indicated compounds from the groundwater to levels acceptable to the U.S. EPA and Pennsylvania Department of Environmental Resources. Plans for

soil and groundwater remediation and treatment have been submitted to the these agencies for their review. We estimate the cost to install recovery and treatment systems at approximately $2 million with related expenses of $500,000 per year for several years.

In April, Ashland entered a consent agreement with the Pennsylvania Department of Environmental Resources to allow the company to re-open the asphalt facility at the Floreffe terminal. While we do not agree with all of the allegations in the consent order, we believed it was important to reach an agreement that would address the state's concerns and lead to the re-opening of the facility, since we are a significant supplier of asphalt to Western Pennsylvania.

We are continuing to work with all appropriate state and federal agencies reviewing the tank collapse. From the beginning, Ashland has endeavored to be quick and candid in its response to requests for information from government agencies, the public and the news media. At times, our ability to do this has been constrained by the lack of complete information. Nevertheless, we have tried to be as open as possible, and we will continue this practice. It may be of interest that between the end of January and the end of February Ashland management testified before the Pennsylvania Senate Environmental Resource and Energy Committee; the Transportation, Tourism, and Hazardous Material Subcommittee of the U.S. House of Representatives Energy and Commerce Committee; and the Environmental Protection Subcommittee of the U.S. Senate's Environmental and Public Works

Committee. In addition to these hearings, a number of meetings and briefings have been held with various state and federal agencies. We have also cooperated with the Tank Collapse Task Force appointed by Governor Casey of Pennsylvania and an investigation conducted by the National Bureau of Standards under the auspices of U. S. Representative Walgren.

Although other organizations facing similar problems have often concluded that their own narrow interests would be promoted by refusing to cooperate with such public investigations, Ashland believes that it is only through a cooperative public evaluation of the causes and effects of this event that similar environmental incidents can be prevented or at least minimized in the future.

Remaining activities in this phase can be generally described as assessment of damages. During this period, we will be handling approximately 20 class action lawsuits and third-party damage claims being handled outside these lawsuits.

Assessing the environmental impact also will constitute a major portion of this activity. Shortly after the spill, we provided a $250,000 grant to the Center for Hazardous Materials Research at the University of Pittsburgh for an independent year-long environmental and ecological study. The study is focusing on where the oil went and what effects it had on biological life, including fish, fowl, river mammals, plants, bottom dwellers and other forms of aquatic life, including endangered species. It also is examining river sediment, mixing

and dilution of the fuel and water and other environmental aspects.

In addition, we have retained ERT and Battelle to conduct further study on the impacts of the spill. Resources being examined include surface water, bottom sediments and bank soils, aquatic biota, terrestrial wildlife and vegetation, sensitive ecological areas and recreational use areas.

These studies involve sampling and observation of banks, water, sediment, fish and other aquatic life at as many as 30 locations along a 740-mile stretch of the rivers, beginning upstream of the Floreffe terminal and extending to Evansville, Ind. While we do not have all the results of ERT's work as yet, we currently believe that further study may not be necessary along the entire 740-mile stretch previously studied. We are working with state and federal natural resources trustee agencies to determine the extent of natural resources damage, if any, and what remedial steps may be needed.

Despite our spill and the other crude oil and product spills which have occurred over the past five months, we do not believe that additional legislative requirements are necessary. Instead, we continue to believe that the industry's self-enforcing actions combined with existing regulations are sufficient to protect the public and the environment. In that context, we continue to urge for clarification of existing regulations and standards to incorporate the lessons learned from this event.

In summary, we deeply regret that this incident ever occurred. We believe we did as good a job as anyone could do,

given the circumstances, in responding to the immediate emergency and in trying to minimize the impact on the communities involved. We have tried to be as responsive as we can be to all of the demands being made of us, and we will continue to cooperate with all appropriate agencies on remaining matters.

Now I am ready to address any questions you may have.

FAILURE INVESTIGATION OF ASHLAND OIL TANK NO. 1338 AT FLOREFFE, PENNSYLVANIA

by

BATTELLE
Columbus Division
505 King Avenue
Columbus, Ohio 43201-2693

SUMMARY OF FINDINGS

Ashland Oil Tank No. 1338 was relocated from an Ashland facility near Cleveland, Ohio, and reassembled at Floreffe, Pa. The tank was placed into operation at Floreffe in August, 1987. For the next several months the level of product fluctuated with the peak levels increasing. On January 2, 1988, a level of 45 feet, 10-3/4 inches was reached for the first time at the new site. Around 5:00 p.m., and approximately 3 minutes after reaching this level, the tank wall failed. Battelle was asked by Ashland Petroleum Company to conduct an independent investigation to determine the probable cause of the failure.

A site visit was made in the morning of January 6, 1988. At that time major portions of the tank, bottom plating and exposed area of the foundation were accessible for close viewing. Initial examinations of the failed tank section indicated that the tank was failed by brittle crack propagation emanating from a small flaw below a weld joining the lowest and second level of steel plates which form the wall of the tank. However, it was not known at that time whether the observed fracture was the primary failure or a secondary failure produced by some other occurrence, e.g., explosion, foundation subsidence, overpressure.

Battelle's overall approach to the failure investigation was to consider all possible failure mechanisms, eliminate those for which a sound scientific rationale could not be established, and arrive at a reconstruction of the events leading to the failure. This reconstruction of the failure event was supported by engineering and physical principles consistent with all physical evidence, information, and data. This was accomplished through site/debris examination, review of design/construction/operating information, determination

of material properties, and fracture, stress, and foundation analyses.

Battelle has concluded that the tank failed by brittle fracture of the tank wall originating at an existing flaw in the lower level plate. The conditions necessary for brittle fracture were present in the tank and were sufficient to produce the failure, as is evident from the following determinations:

- Initiation point -- A flaw was found in the steel plates of the tank at the origin of the fracture of the tank wall. This flaw, approximately the size of a dime, was located close to a weld in material embrittled by the stress and heat of welding. The orientation of the flaw in the wall made it susceptible to failure when under stress due to filling of the tank.

- Temperature and material state -- Temperature of the steel at the time of failure was calculated to be in the temperature at which a brittle fracture would occur. Thus, once the initial flaw began to grow, it would propagate through the thickness and height of the tank without arresting.

- Stress -- Stresses due to filling of the tank, coupled with weld residual stresses, were sufficient to initiate a crack from the existing flaw. Once the crack initiated, stresses due to liquid in the tank were sufficient to propagate the crack.

Brittle fracture produced by these conditions was the primary and sole mechanism which produced the observed failure. No other failure causes or contributing mechanisms were determined to be significant.

All physical evidence suggests that a crack initiated at an existing flaw in the tank wall. Based on chemical and metallurgical analysis of the flaw surface, the flaw was determined to have been present in the plate prior to the initial assembly of the tank and to have been produced by an oxyacetylene torch. This process initially created an embrittled region around the flaw. This embrittlement was furthered by additional welding in the vicinity of the flaw during reconstruction of the tank at Floreffe.

With embrittlement, this existing flaw was sufficient to initiate a crack under the static tank wall stresses. The stress, due to liquid in the tank, increased as the level of liquid in the tank rose. Consequently, on January 2, 1988, a new maximum stress was achieved. Combined with the residual stresses produced in the steel by welding, a critical condition occurred in the embrittled region around the flaw. The embrittled region failed, a crack was initiated, and the crack propagated. The fracture propagated downward into the lower level plate and upward through other plate levels, causing the tank wall to part.

The driving force for propagation of the fracture was solely produced by the stress of pressure due to filling of the tank. The fracture did not arrest because the temperature of tank wall calculated at approximately 38F, placed the steel in its brittle range. Consequently, once initiated, the fracture did not arrest.

The initial fracture, originating from the existing flaw, triggered the dynamic chain of events:

- The tank wall fractured in less than a second and the walls began to separate rapidly.
- The bottom-to-wall joint failed.
- The tank wall moved from its original position due to the force of the exiting oil, taking the tank roof with it.
- Oil rushed out of the failed tank in a relatively low height stream, eroded the tank foundation, and a portion shot over the dikes like a skier off a ski jump.
- The stream of oil splashed against other tanks hitting one with such force that it buckled.

- The tank wall settled some 120 feet from its original location with the roof still partially attached. That portion of the oil, which shot over the dikes, entered storm sewers which carried it to the river.

The failure was complete--caused solely by the mechanism of brittle fracture of the tank wall.

5/25/88
/jvb

STATEMENT ON BEHALF OF

SUN REFINING AND MARKETING COMPANY

PRESENTED BY

MR. DAVID M. ZEBLEY

VICE PRESIDENT, SUNOCO MARKETING

BEFORE THE

OVERSIGHT AND INVESTIGATIONS SUBCOMMITTEE

OF THE

HOUSE COMMITTEE ON MERCHANT MARINE AND FISHERIES

WASHINGTON, D.C.

MAY 26, 1988

Good morning. I am David M. Zebley, Vice President of Sunoco Marketing (Sunoco), the retail sales division of Sun Refining and Marketing Company (Sun). I appreciate the opportunity to appear before this Committee to present Sun's views on the prudent management of aboveground tanks. My remarks will be general in nature but, to address specific technical questions you may raise, I have with me A. B. (Ben) Chieffo, Manager of Environmental Affairs, and David R. Thomas, Manager, Fuels Manufacturing.

Scope of Operations:

Sun owns and/or operates 39 terminals in its marketing geography. Sited within those terminals are 266 aboveground storage tanks (ASTs), with a capacity of 5.1MM barrels. Sun also owns and operates three mainland refineries located in Marcus Hook, Pennsylvania, Toledo, Ohio, and Tulsa, Oklahoma in which there are approximately 1300 ASTs with 23.4MM bbls. capacity. The materials stored are typically crude oil, lube oils, chemicals and fuels. This background will provide some dimension of the size of Sun's tank population and some appreciation for the significant challenge managing this population poses. I believe Sun's track record speaks well of the management program Sun has developed over the years.

In my opinion, the industry, on balance, can be proud of its safety record which is the result of millions of dollars spent annually to improve operations and train employees to operate tanks in a responsible manner.

It is also the result of adhering to currently applied practices and codes regulating aboveground storage tanks developed by organizations such as the American Petroleum Institute (API) and the National Fire Protection Association (NFPA). Our objective is no less than to establish and maintain a safe environment for both employees and the communities surrounding our facilities.

The focus of my remarks will be:

1. Construction
2. Inspection

Construction:

I'm sure that you will be hearing, if you haven't already, a great deal about the American Petroleum Institute's Standard 650, 7th Edition, Revision #1. Sun is a 650 tank builder. It is the accepted industry standard that describes design specifications, site selection, construction, standards, and testing of aboveground storage tanks. Although 650 has been characterized as a minimum standard, it is a conservative, rigorous, and widely-applied standard. For example, a 1985 survey showed that 42 states referenced API Standard 650 in their fire codes.

For a newly-constructed tank to be labeled a 650 tank, the construction process must strictly comply with the standard, including the final testing procedure prior to the tank going into service. Sun, as a matter of policy, hydrostatically tests all new tanks before they are placed into service. In our opinion, that is the one certain method that fully tests the strength integrity of a tank.

It's important to note without endorsing or rejecting any particular tank construction company that Sun carefully screens then selects the company that will construct the tank to exacting specifications. Incorporated into the process are checks and inspections on the work completed and work in progress by Sun engineers.

Inspection:

API Guide for Inspection of Refinery Equipment Chapter XIII - Atmospheric and Low Pressure Storage Tanks is a general guide to inspecting aboveground storage tanks. API summarizes Chapter XIII in the following:

Chapter XIII provides a general description of the types of tanks covered, reasons for inspection, causes of deterioration, frequency and timing of inspections, methods of inspection, safe limits of deterioration of equipment, methods of repair, and appropriate records and reports.

Sun employs many of the techniques described in Chapter XIII, which are integrated into our own inspection regimen as part of Sun's tank management procedures.

To more fully explain the inspection regimen, Sun performs inspections on a routine basis to ensure the safe operation of its tanks, both in the refineries and terminals. In the terminals, visual inspections are performed daily because of the small number of tanks involved. More detailed monthly and annual inspections are conducted by the terminal manager and his staff and by a field engineer respectively, who are trained to recognize problem areas and identify symptoms of potential defects or deficiencies. Inspections include, as well, the dikes, which comply with the NFPA #30 Standard, surrounding the tanks.

The larger number of refinery tanks requires a different approach. Visual inspections, for which the tank operators are responsible, are done less frequently than daily. Additionally, tank crews within the refinery are responsible for executing preventative maintenance programs. Beyond these more immediate inspections programs, a detailed in-service tank inspection is conducted every five years, and an out-of-service inspection, which permits us to physically enter the tank, is typically performed on a ten-year cycle.

As you may have noted in the preceding comments, visual inspections are a significant component of our inspection program. As a method, it may not appear as sophisticated as other methods, but it immediately enables the inspector to identify small leaks (weeping) and quickly initiate corrective action.

In addition to inspection procedures, many of our tanks are equipped with "high level" overflow alarms that signal our operators of a potential problem to initiate timely tank corrective measures. Each of our facilities has an up-to-date Spill Prevention Control and Countermeasure Plan and, in addition, each facility has its own Sun Oil Spill Manual. This oil spill response contingency plan is designed to prepare an organization to make a rapid coordinated response to a spill accident. Its basic elements include the following:

1) Reporting
2) Initial Response Actions
3) Organizations
4) Communication
5) Logistics
6) Job Descriptions and Assignments
7) Training Exercises Including Real-World Practical Drills
8) Resource Identification

In closing, I'd like to make two additional points: 1) Sun makes every effort to secure the permits required by all jurisdictions for permitted tank activity; and 2) Sun could support a registration program of aboveground storage tanks in order to provide a tank inventory to EPA or state agencies for management purposes.

Sun is confident that the procedures it has in place reduce the risk of a catastrophic incident and also of minor tank failures. Guarantees against these types of incidents occurring cannot be legislated or regulated, but their possibility can be minimized by prudent design and operating practices. Current regulations, codes, and standards diligently practiced are adequate safeguards which provide for the safety of the communities in which these tanks are located.

This concludes my prepared statement. If there are any questions, I, Mr. Chieffo or Mr. Thomas will be happy to address them. Thank you for the time permitted before this Committee.

CHMR
Center for Hazardous Materials Research
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STATEMENT PRESENTED BY

Edgar Berkey, Ph.D., President
Center for Hazardous Materials Research
University of Pittsburgh

TO

Committee on Merchant Marine and Fisheries
U.S. House of Representatives
Washington, D.C.

REGARDING

ENVIRONMENTAL EFFECTS OF THE JANUARY 2, 1988,
DIESEL OIL SPILL INTO THE MONONGAHELA RIVER

May 26, 1988

Thank you, Mr. Chairman. I am Dr. Edgar Berkey, President of the Center for Hazardous Materials Research (CHMR) of the University of Pittsburgh. CHMR is an organization actively involved in a wide range of applied research, education, training, and public policy projects involving the use and disposal of hazardous materials and waste.

Since early January, CHMR has been working to understand both the short-term and long-term environmental effects resulting from the Ashland diesel oil spill into the Monongahela River. This work is being funded by a no-strings attached grant received by the University from Ashland Oil.

I want to emphasize that we take very seriously our commitment to conduct our work in an open, independent manner. To the extent that we can, we have been cooperating with all the public and private organizations involved.

I appreciate the opportunity to testify today on some of the information we have developed to date, conclusions we have drawn, lessons we have learned, as well as the work that still remains to be done.

OBJECTIVE OF WORK

CHMR's objective in this work on the oil spill is to provide the public with understandable information on the types of issues important to them. For major hazardous materials incidents like this spill, we are convinced it is extremely important that the public have sound, credible technical information available so they can more better understand the environmental and public health consequences of what happened.

In an era filled with legal, liability, and financial ramifications, this is not always easy to do. However, the American people need to have a better understanding of events such as these, or it will never be possible to adequately address our hazardous materials problems as a society because attitudes and opinions will develop and decisions will be made with inaccurate information.

MULTIDISCIPLINARY APPROACH

One of the public service goals we have set for CHMR as an organization is to develop and provide useful technical information on key hazardous materials issues.

At the heart of our approach to this spill is the use of a multidisciplinary team. Oil spills are complicated, dynamic events with a multitude of variables and considerations that must be taken into account.

The University of Pittsburgh is the largest research university near the spill site, and to conduct our work, we are accessing resources from the Engineering School, Graduate School of Public Health, and Center for Urban and Social Research.

In addition, CHMR is making use of an existing cooperative agreement with the Netherlands Organization for Applied Scientific Research (TNO) which has extensive experience evaluating environmental and public health effects of oil spills on a worldwide basis.

QUESTIONS BEING ADDRESSED

CHMR's work on the oil spill is aimed at developing answers to the following set of nine questions that we believe capture most of the public's concerns.

1. What hazardous materials were released by the incident?

2. How did the diesel oil released from the collapsed tank enter the river and how fast?

3. How much oil went into the river?

4. What conditions was the oil exposed to in the river?

5. What happened to the oil in the river?

6. What were the short-term environmental effects on water quality, wildlife, and people?

7. What are possible long-term effects on water quality, wildlife, and people?

8. What further studies are needed?

9. What other lessons about environmental effects from incidents like this were learned?

Our work is focusing on identifying critical issues, gathering all available data, collecting additional data or performing experiments where necessary, and evaluating the information in order to reach a useful conclusion.

In the next few days, we will be publically releasing a more comprehensive progress report on the full scope of our activities, including details supporting today's comments.

RIVER SYSTEM AFFECTED BY SPILL

For reference in understanding my comments today, I have attached a figure from the U.S. Corps of Engineers showing elevations and locations of the 20 dams on the Ohio River system from the city of Pittsburgh to the Mississippi River. The spill occurred on the Monongahela River about 25 miles upstream from Pittsburgh, and there are two additional dams over that distance.

As indicated on the figure, as the river water moves over each dam, it drops many feet in distance--a circumstance which adversely affected oil recovery efforts because it caused the oil and water to become increasingly mixed as each dam was passed. During the spill event, detectable oil concentrations were found deep in the river.

For reference, the quantity of water flow past the spill site on January 2 was around 5 million gallons per minute, while in the Ohio River just downstream from Pittsburgh in early January, it was more than 10 million gallons per minute.

MAJOR CONCLUSIONS

Our major conclusions regarding the spill to date are:

1. Amount of Oil Entering the River System

   705,000 gallons of diesel oil #2 are estimated to have been released to the Monongahela River. Of this amount, about 205,000 gallons were recovered by cleanup operations, leaving approximately 500,000 gallons lost to the river system.

2. Rate at Which Oil Entered River

   Due to the catastrophic nature of the incident, and the need for emergency response personnel to concentrate on the emergency at hand, no measurements were made during the spill event to determine the rate of oil release. Based on subsequent interviews with emergency response and Duquesne Light Company personnel on-site during the incident, combined with on-site assessment and a hydraulic analysis of the sewer line pathway taken by the oil to the river (see attached figure), the estimated rate at which the oil entered the river is:

Time Period	Volume Discharged
First 5 minutes	40,000 gallons
Next 10 minutes	130,000
Next 15 minutes	110,000
Next 1.5 hours	100,000
Last 9.5 hours	310,000
Sudden Release of Plug	15,000
Total Released	705,000 gallons

3. Amount of Oil Recovered by Cleanup Operations

   The timeframe over which the 205,000 gallons of oil were recovered from the river system is as follows:

Timeframe	Approximate Quantity Recovered	Cumulative Amount Recovered
First 5 days	140,000 gallons	68%
Next 4 days	25,000	80%
Next 10 days	20,000	90%
Next 2 months	20,000	100%

4. Region of Most Significant Environmental Impact

   The region of most significant environmental impacts from the oil are expected to be in the 112 mile stretch between the spill site at Floreffe, Pennsylvania, and the city of Wheeling, West Virginia (Ohio River Mile 87). Water quality measurements at Wheeling indicate that only about 125,000 gallons of oil (or 25% of the unrecovered amount) remained in the water when the spill passed the city.

5. Fate of Oil in The River

Most of the oil entering the river system (approximately 375,000 gallons) was lost from the water column by adsorbtion/sedimentation and volatilization between Floreffe and Wheeling. Conditions were such (low temperature, suspended material in the river, icing, low flowrate between dams, etc.) that the majority of the oil lost was sedimented instead of volatilized. Oil that is sedimented will not significantly break down but will be slowly released from the sediment over a long period of time, acting as a long-term source into the water.

6. Range of Expected Environmental Impacts

Significant environmental impacts resulting from the oil in the river are not expected much beyond the location of the Willow Island Lock and Dam (Ohio River Mile 161.7).

Slow river velocities between the city of Wheeling and Willow Island Lock and Dam, coupled with suspended material in the water and the absence of major tributaries flowing into the Ohio River, are believed to have caused much of the 125,000 gallons of oil that passed Wheeling to have settled out before the spill arrived at the dam. In addition, heavy rains began within a day after the spill arrived at the dam, greatly diluting the remaining oil concentration in the river.

7. Short-Term Impacts on Fish

Short-term impacts on fish from the spill were most pronounced in the water pool prior to Willow Island Lock and Dam where the largest number of fish kills were reported. The combination of appreciable diesel oil concentrations in the water (peak level of 0.60 parts per million), relatively long exposure time for the fish because of the slow water velocity in this pool (i.e., more than 4 days), and lack of major diluting tributaries in this stretch of the river yielded conditions that would be expected to result in significant fish kills based on toxicity data for diesel oil on fresh water fish.

While the peak concentration of diesel oil in water at upstream locations was higher, the time over which the fish were exposed to the oil was much lower, and the presence of major tributaries (i.e., Allegheny River and Beaver River) provided opportunities for fish to take evasive action and enter cleaner water. This set of conditions restricted the number of fish kills that occurred and, indeed, only a small number were reported compared with the existing population of fish in the river at those locations.

8. Short-Term and Long-Term Impacts on Waterfowl

Short-term impacts on waterfowl from the spill are restricted to those stretches of the river system where there were significant amounts of floating oil on the water that could coat bird feathers. Because of the ability of the diesel oil to emulsify, these stretches are located entirely in Pennsylvania and include the Monongahela River and the upper reaches of the Ohio River.

An accurate assessment of the extent of the waterfowl kills has not been possible to complete because of the anecdotal nature of much of the information. The fact that the spill occurred during winter when the waterfowl and other birds present on the Monongahela and Ohio Rivers were primarily those that have become domesticated, means that short-term impacts on more wild waterfowl species wintering in other parts of the U.S. were small.

A subsidiary of the University of Pittsburgh Trust.

Potential long-term impacts from oil coating on new eggs that have been laid (i.e., from contaminated nest material) of from the presence of oil in the sediments are being studied.

9. Most Probable Source of Long-Term Toxic Effects

Because of the particular composition of the diesel oil that entered the river, the most important components of the oil in the sediment that pose a potential source for toxic effects are naphthalene and naphthalene-related compounds.

While there is no potential for long-term accumulation of these naphthalenes in fish, birds, mammals, and other vertebrates because of rapid metabolization, there is the possibility of chronic effects to directly exposed species (i.e., primarily bottom-dwelling organisms) from long-term, low-level exposures as the oil is released from the sediment.

10. Evaluation of Preliminary Fish Flesh Analyses from ORSANCO

Information from ORSANCO that two types of fish--sauger and smallmouth bass--caught in the Monongahela and Ohio Rivers in March and April at six different locations ranging from 11 to 365 miles downstream of the spill site were found to contain certain naphthalene-related compounds at total levels between 0.639 and 9.376 parts per million is not yet sufficient to establish a link with the January 2 spill. More data are needed. However, the concentration levels are not believed to pose a risk to people eating the fish.

IN CONCLUSION

In conclusion, we will keep the public advised on the progress we continue to make on the topics mentioned today, as well as several other activities we have underway that will round out our work. These other activities include: (1) a survey of the public's perception of the environmental risks from the spill to be conducted in three communities (Robinson Township, Pennsylvania; Wheeling, West Virginia; and Cincinnati, Ohio) which experienced different levels of water service disruption; and (2) a world-wide compilation of case histories of major oil spills, including their causes, frequencies, and environmental impacts, as well as emergency preparedness and response actions.

I would like to stress that our work still has a long way to go before we have a complete picture of all the environmental effects of the spill and their implications. However, we already see the value of having an independent organization conduct a multidisciplinary investigation into an event like this with the objective of understanding and explaining the environmental effects. Nevertheless, we are being limited by the amount of good quality data available and wish more had been done to take appropriate types of environmental samples before, during, and after the spill passed key locations.

TESTIMONY OF E. CRONE KNOY, P.E.
BEFORE THE INVESTIGATIONS AND OVERSIGHT SUBCOMMITTEE OF THE MERCHANT MARINE AND FISHERIES COMMITTEE OF THE UNITED STATES HOUSE OF REPRESENTATIVES

10:00 a.m. MAY 26, 1988

ASHLAND OIL TANK INCIDENT

Mr. Chairman, Committee Members, Ladies and Gentlemen. It is indeed an honor and a privilege to have been asked to deliver testimony today concerning the January 2, 1988 collapse of an oil tank near Floreffe, Pennsylvania. As I stated to Kurt Oxley, the Subcommittee Staff Contact, I have 19 years experience in the design and construction of welded steel tanks and 9 years experience in the furnishing of inspection and consulting services concerning tanks; however, these tanks have been primarily for water storage. I am therefore more familiar with the American Water Works Association (AWWA) Standards concerning tanks than I am the American Petroleum Institute (API) Standards. These standards are, however, based on the same sound engineering principles and construction practices.

Comparison of Tank Standards With Other Standards: Both the API and AWWA Standards incorporate some of the lowest stress levels (highest factors of safety) utilized in construction practice today. These low stress levels are especially significant in view of the **predictability of the loads** applied. For example, envision that a tank of certain fixed dimensions can hold only a fixed maximum volume (and weight) of liquid, as compared to the now famous Kansas City Hyatt Regency walkway which was not only required to sustain a variety of combinations of quantity, shapes, sizes, and weights of people and objects, but was subjected to the dynamic loads of dancing not anticipated in one's basic engineering structures courses. I am using the Kansas City Hyatt incident as a comparison example, because of the "heads must roll" attitude that seemed to be so present in the aftermath of the Hyatt walkway failure. In addition to the low allowable stress levels and the predictability of loads, there is the simplicity of design -- connections in welded steel tanks are made by butting two steel plates together and welding them. There is not the multiplicity of connection designs and the mutations of them which allegedly caused that fateful Hyatt crash. The Standards for the design and construction of steel storage tanks for water, oil, and petro-chemicals are well conceived, proven, and quite proper for their application.

API versus AWWA Standards: The question frequently comes up as to the rationale behind the differences between the American Petroleum Institute (API) and the American Water Works Association (AWWA) standards for tanks. The API Standard 650 allows tanks of standard quality steel to be designed for 20,000 psi whereas the AWWA Standard D100 places the maximum shell stress of 15,000 psi. "Why the difference?", the lay person asks. The public's immediate concern is that most tanks built to API Standards hold material which could be toxic, or at the minimum detract from the quality of our streams and waterways. I'll admit that I have had some of the same thoughts, but I have sat only on the AWWA Standards Committee. What rationale is behind this difference:

< The API 650 Allowable Stress is still very conservative when compared to other standards or codes.
< API 650 Standard contains dimensional tolerances for alignment during assembly which the AWWA D100 Standard does not address.

< Water tanks are usually built in highly populated areas adjacent to homes, schools, or factories whereas petro-chemical tanks are usually in areas isolated from high concentrations of people.

< Water tanks are more subject to corrosion in the vertical plates (the ones more highly stressed) than are tanks containing oil.

< Water tanks are frequently constructed at high elevations which makes quality control more difficult.

< API tanks are usually purchased by multiple tank purchasers who have expertise and experience in specifying and inspecting tanks and are aware of the hazards inherent in their use. AWWA tanks are frequently purchased by public entities which have little expertise in specifying tanks or monitoring their construction.

History of Failures: I have investigated many failures of tanks during my 28 year career in the tank industry. Invariably, no failure was due to only one cause, but each failure was always due to at least two causal effects occurring at the same time. They usually consisted of a combination of the following:

< Inadequacies in design
< Inadequacies in assembly or welding
< Inadequate materials
< Unanticipated operating conditions
< Unanticipated loadings
< Corrosion, other deterioration, or damage
< Foundation or subsurface failure

For example, moderately overstressed designs have failed only when accompanied by poor welding, corrosion, or another one or more of the above causes. In my thinking, this pattern of needing more than one cause to precipitate a failure, is excellent historical evidence of the adequacy of the present standards.

Summary: It is my belief that the present design and construction standards for steel storage tanks are sufficiently conservative. Owners, Engineers, and Contractors have been reminded by this incident that the requirements in the Standards are **minimum** requirements. The steel tank industry is a very competitive one. The United States procurement tradition of taking the low bidder and expecting his quality of workmanship and materials to be equal to the other bidders, may place the members of the industry into compromising positions. The system asks for the impossible price-wise, and in some cases allows the level of acceptance to be lower than the applicable standards might permit. It may not be feasible to meet the Standards at the "market price". This practice seems to be more prevalent in the tank repair and re-erection business than in the new tank business. Although not a self-policing organization, the firms who are members of the Steel Plate Fabricators Association (SPFA) are generally active in industry standards organizations and are aware of what it takes to build a quality tank.

Besides participating in the development of the Standards, members of the industry also volunteer their time to gather design data and methods, and through the funding of the American Iron and Steel Institute (AISI), publish reference material for use by tank designers, fabricators, erectors, and purchasers. The Steel Plate Fabricators Association and AISI also conduct seminars for purchasers of Steel Water Storage Tanks.

Closure: Ladies and Gentlemen, let this not be a "Three Mile Island", which brought doom on the Nuclear Power Generation Industry. Let this be what it is -- a well publicized warning to purchasers, designers, and constructors of tanks, that Standards are to be followed, not circumvented. Thank you.

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A Registered Professional Engineer in 26 states, Mr. Knoy is President of TANK INDUSTRY CONSULTANTS, INC. He has been active in the design, construction, and evaluation of field erected steel tanks since 1960. In 1979, he formed TANK INDUSTRY CONSULTANTS, serving engineers, owners and constructors of Steel Water Storage Tanks. This firm now employs 22 engineers, technicians, and support personnel and serves clients nationwide. Mr. Knoy serves on several tank related Committees of the American Water Works Association, including the Standards Committee on Steel Elevated Tanks, Standpipes and Reservoirs, the Task Force for the Standard for Coating Steel Water Storage Tanks, and is Chairman of the Steel Tank Manual Task Force. A frequent speaker at national industry functions, he has been engaged by the American Iron & Steel Institute and Steel Plate Fabricators Association to design and coordinate a nation wide series of steel tank seminars.

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